M.TECH. ADMISSIONS 2019
IIT MADRAS

INFORMATION BROCHURE

भारतीय प्रौघोगिकी संस्थान मद्रास

Indian Institute of Technology Madras

VISION & MISSION

VISION

To be an academic institution in dynamic equilibrium with its social, ecological and economic environment, striving continuously for excellence in education, research and technological service to the nation.

MISSION

- To create and sustain a community of learning in which students acquire knowledge and learn to apply it professionally with due consideration for ethical, ecological and economic issues.

- To pursue research and disseminate research findings.

- To provide knowledge-based technological services to satisfy the needs of society and the industry.

- To help in building national capabilities in science, technology, humanities, management, education and research.

QUALITY POLICY

To pursue global standards of excellence in all our endeavors namely, teaching, research, consultancy and continuing education and to remain accountable in our core and support functions through processes of self-evaluation and continuous improvement.

CORE VALUES

In pursuit of its mission, IIT Madras will

- develop human resources to serve the nation
- recognize teaching as a unifying activity
- nurture integrity, creativity and academic freedom
- retain a willingness to experiment with new paradigms

CONTENTS

1. THE INSTITUTE

The Indian Institute of Technology Madras (IIT Madras) was established as an autonomous institute of national importance in 1959 by the Government of India with initial technical and financial support from the Government of Germany. IIT Madras, with a number of well-equipped laboratories, advanced research facilities, sophisticated services and computing and networking capabilities, is recognized to have done exceedingly well in the fields of higher technical education, research and industrial consultancy.

IIT Madras conducts academic Programmes of B.Tech., Dual Degree (B.Tech. and M.Tech.) Dual Degree (B.S. & M.S.), M.B.A., M.Tech., M.Sc. Integrated M.A., M.S., and Ph.D. in various disciplines. Located in about 250 hectares of natural flora and fauna, with 19 students' hostels and about 1076 faculty/ staff/ married research scholars' quarters, IIT Madras is one of the greenest residential campuses in the country. Faculty of international repute, a brilliant student community, excellent technical and supporting staff and an effective administration have all contributed to the pre-eminent status of IIT Madras.

2. M.TECH. ADMISSIONS

2.1 About M.Tech. Programmes

The four-semester M.Tech. Programmes offered in various Disciplines and Programmes by different departments of the institute are based on the credit system and provide a student with a wide choice of courses. Each Programme comprises several core and elective courses and project work. These Programmes, along with the number of seats available, are indicated in Table 1.

Further details of the Disciplines/ Programmes offered in the respective departments are given in Section 3 - Programme Highlights. Apart from these, User Oriented M.Tech. Programmes (UOP) are also offered by certain departments to meet specific requirement of industries. Details of these Programmes are available in Section 4 of this brochure.

Each Discipline/ Programme in a department has a faculty advisor to help the students in the choice of academic options for elective courses. Students may be permitted to do their project work in industries and other approved organizations. Students are also encouraged to participate in the research and development projects undertaken by the faculty through the Industrial Consultancy and Sponsored Research (IC & SR; see also Section 6).

Opportunities exist for a limited number of students to carry out M.Tech. Projects in Germany.

Almost all students desirous of placement are placed in reputed organizations and industries after completing their courses of study.

M.Tech. students will be eligible for upgradation to Ph.D. if they satisfy the following criteria:

a) The candidate should have successfully completed a minimum of 2 semesters in the M.Tech. Programme.

b) The candidate should have a minimum CGPA of 8.0 in the prescribed courses.

A Committee duly constituted by the Head of the Department will consider applications for

upgradation to Ph.D. and make its recommendation. After upgradation, they may opt for two degrees (M.Tech. & Ph.D.) subject to the fulfilling the course requirements.

2.2 Financial Assistance – For Indian Nationals only

(i) Financial assistance in the form of Half-Time Teaching Assistantship (HTTA) at the rate of **₹12,400/- p.m.** (tenable for a maximum period of 24 months) will be awarded to Indian Nationals doing the M.Tech. Programmes, subject to Institute rules. HTTA students are required to assist the department for 8 hours of work per week related to academic activities of the department such as laboratory demonstration, tutorials, evaluation of assignments, test papers, seminars, research projects, etc. The number of seats available under HTTA is indicated in Table 1.

(ii) A few assistantships may also be offered by some government organizations such as Atomic Energy Regulatory Board, Aeronautical Research and Development Board, and so on.

2.3 Fellowship Schemes

(i) DAE-GF Scheme

DAE-Graduate Fellowship (DAE-GF) Scheme in various engineering disciplines is offered by Department of Atomic Energy. GATE qualified candidates selected under this scheme will get a fellowship of **₹35,000/-** per month. After successful completion of M.Tech. Programme, the DAE-GF scheme fellows will be placed in one of the DAE units.

(ii) AERB-GF Scheme

Under Atomic Energy Regulatory Board Graduate Fellowship (AERB-GF) Scheme, up to three candidates will be selected either from Mechanical Engineering (only in Design/ Nuclear/ Thermal Engineering) or Chemical Engineering discipline or from both and they will be offered a monthly stipend. More details about AERB-GF scheme may be seen in the website www.aerb.gov.in.

(iii) ESSO-MoES Scheme

Earth System Science Organization - Ministry of Earth Sciences (ESSO-MoES) ESSO-MoES sponsors a maximum of 10 students for M.Tech. in Ocean Technology (OE2) program which may include up to 2 candidates from ESSO-NIOT (National Institute of Ocean Technology).

2.4 Reservation of Seats

Seats are reserved for Indian Nationals under the categories, SC/ ST/ OBC (Non-creamy layer) and PwD (Persons with Disability) according to the Government of India rules.

2.5 Who can Apply?

A) GATE qualified candidates
B) IIT Graduates with B.Tech. Degree
C) Candidates sponsored by various organizations recognized by DST as Research and Development units, candidates sponsored by NIOT or from educational institutions approved by AICTE/ UGC/ Government or from Government/ Public Sector Undertakings
D) QIP candidates

E) UOP candidates of various organizations/industries as per the MoU (Memorandum of Understanding) with the Institute
F) Defense sponsored candidates

The minimum requirement and admission procedure are different for different categories (A to G) and are given in Section 2.7. Candidates should contact the appropriate office for details as per the addresses listed in Section 2.6. Candidates belonging to categories C to F cannot apply through M.Tech Application Portal (MAP).

2.6 Whom to Contact?

The candidates may write to the following offices for details about specific Programmes.

For Categories A & B: The Chairman M.Tech. Admission Committee GATE Office IIT Madras Chennai 600036 Online Application: http://mtechadm.iitm.ac.in email: mtechadm@iitm.ac.in Phone: 044-22578200; Fax: 044-22578204	For Category D: The Chairman Centre for Continuing Education IIT Madras Chennai 600036
For Categories C & E: Joint Registrar (Academic Courses) IIT Madras Chennai 600036 Also see, Webpage: www.iitm.ac.in under "NOTICES" - "M. Tech. Advertisement (Sponsored)" http://www.iitm.ac.in/admissionprocedureforforeignstudents	For Category F: Director General of Military Training General Staff Branch Army Headquarters DHQ PO, New Delhi 110011

2.7 Minimum Eligibility

A. FOR GATE QUALIFIED CANDIDATES

(Also, see Section 2.8.1)

Candidates qualified in GATE 2017, GATE 2018 or GATE 2019 and satisfying any one of the following:

i. Bachelor's degree in Engineering/ Technology/ Architecture from educational Institutions approved by AICTE/ Government*
ii. Master's degree in Chemistry/ Life Sciences/ Mathematics/ Physics related subjects from educational Institutions approved by UGC/ Government*
iii. Degrees obtained through Distance Education/ Correspondence Mode for the qualifying degree specified in [(i) or (ii)]. The Departments will follow suitability test/ interview procedure for screening in such cases.
iv. Candidates yet to appear or have appeared in the final examination for the qualifying degree specified in [(i) or (ii)] and whose results are likely to be declared by July 15, 2019.

v. Associate Membership holders of professional bodies for admission into their **parent disciplines from the following**:
   - The Institution of Engineers (India) (AMIE)
   - The Aeronautical Society of India (AMAeSI) (eligible only for aerodynamics, structures and propulsions streams)
   - The Indian Institute of Metals (AMIIM)
   - The Indian Institute of Chemical Engineers, including Polymer and Environmental Group (AMIIChemE)
   - The Institution of Electronics and Telecommunication Engineers (AMIETE)

* If the degree is issued by a university in countries other than India, the degree must be recognized by Association of Indian Universities (AIU)/ Commonwealth Universities/ International Association of Universities (IAU) as equivalent to the corresponding Indian Degrees/ Certificates. Additional requirements of GRE/ TOEFL may be required.

B. FOR IIT GRADUATES
(Also, see Section 2.8.1)

Candidates graduating/ graduated from IITs with B.Tech. Degree and having CGPA of 8.0 (on a scale of 10) and above for others can apply without GATE Score. These applications will be reviewed by the respective Department(s).

C. FOR SPONSORED CANDIDATES
(Also, see Section 2.8.2)

Candidates employed and sponsored (with full pay and allowances for 24 months) by industry/ government organizations/ private and public enterprises, engaged in R&D work recognized by DST/ engineering colleges recognized by AICTE, possessing at least two years of professional experience as on the last date of receipt of applications at IIT Madras can apply, provided they hold:

(i) B.E./ B.Tech. degree from AICTE recognized Engineering Colleges/ University with first class or 60% aggregate marks in all the four years (no need for having GATE Score); or

(ii) AMIE or any other Associate memberships listed above (no need for having GATE Score)

Also visit: www.iitm.ac.in under "NOTICES" - "M. Tech. Advertisement (Sponsored)".

D. FOR QUALITY IMPROVEMENT PROGRAMME (QIP) CANDIDATES
M.Tech. under Quality Improvement Programme (sponsored by AICTE) is advertised separately and the selection of QIP candidates is made through a test/ interview.

E. FOR USER ORIENTED PROGRAMMES (UOP)
Please refer to Section 4 for details of these Programmes.

F. FOR DEFENCE SPONSORED CANDIDATES
M.Tech. Programme sponsored by Defence Authority (Research & Training and Post Graduate Training) is through a separate selection procedure. See page 3.

2.8 How to Apply?

Please note that to apply with a valid GATE Score (GATE 2017, GATE 2018 or GATE 2019) or as IIT B.Tech. Graduate, you have to register in the website mentioned below. If you plan to apply with more than one of the above, register separately using same email

and mobile number but with different credentials among (a) valid GATE 2017 Score, (b) valid GATE 2018 Score (c) valid GATE 2019 Score and (d) IIT B.Tech. Graduation with valid CGPA.

2.8.1 FOR GATE QUALIFIED CANDIDATES AND IIT GRADUATES WITH B.TECH. DEGREE (Refer Sections 2.7 A & B):

Apply ONLINE at http://mtechadm.iitm.ac.in
(Instructions and further links available on the Website)

Application Timeline		
Opening Date	**:**	**06 March, 2019**
Closing Date	**:**	**10 April, 2019 (23:59 hrs)**

Application Fee		
SC/ ST/ PWD/Female Candidates	**:**	**₹ 200**
All Others Candidates	**:**	**₹ 400**

In case of difficulty in applying ONLINE, please contact

The Chairman
M.Tech. Admission Committee
GATE Office
Indian Institute of Technology Madras
Chennai 600036

Phone: 044 - 22578200
Fax: 044 - 22578204
E-mail: mtechadm@iitm.ac.in

The application fee should be paid online at the online Application website.

Before you start filling the ONLINE application form, pay attention to the following:

(a) Carefully read all the instructions given herein.
(b) Study Tables 1, 2, 3 and 4 carefully, along with details of Programmes in Section 3.
(c) If you satisfy the minimum requirement (Section 2.7 A/B), choose your options from Table 1 (also refer Tables 2, 3 & 4) and decide your choices of Programmes.
(d) Note the following additional Suitability Test/ Interview (refer Table 3) requirements for:
  (i) ZE/ ZS candidates may be considered for admission to the Programmes relevant to the discipline of their qualifying degree as decided by the concerned Departments. If they are considered, they may have to take Suitability Test/ Interview for programmes AE1, AM1, AM2, EE1 - EE6, ME1-ME3, MM1, OE1 and OE2.
  (ii) Candidates having degrees obtained through Distance Education/ Correspondence Mode, who apply to programmes AM1, AM2, CA1, CH1, MA1, MM1, OE1, OE2 and PE1.
  (iii) Candidates with Associate membership (AMIE, AeSI, etc.) applying to programmes AE1, CS1, EE1 - EE6, MA1, ME1 - ME3, OE1, OE2 and PE1.

  If you are called for the Suitability Test/ Interview, you **need to be present** to be considered for that particular Programme. You may have to report to the respective departments on 27th April, 2019 (Saturday). Even if you do not attend the Suitability Test/ Interview for a particular Programme, you will still be considered for the other

Programmes that you have chosen in your application and that do not require Suitability Test/ Interview.

(e) Keep ready the soft copy of the following documents (if applicable) for uploading at the website:

- Pdf file of your valid GATE score card
- Image file of your recent passport size photograph (***file in jpeg format****, size,* Min: 10 kB, Max.: 500 kB, - Photo Size, Width: 30 mm, Height: 45 mm)
- Image file of your signature (***file in jpeg format****, size, Min: 10 KB, Max.: 500 kB, - Box Size, Width: 80 mm, Height: 35 mm*)
- Nationality Certificate* (Any of the following: Birth Certificate or First page of your passport or Certificate issued by approved Govt. agency for Nationality)
- Persons with Disability (PwD) are required to upload a certificate* of disability from the **AUTHORIZED MEDICAL BOARD** attached to one of the following - Vocational Rehabilitation Centre (VRC) for Physically Handicapped persons/ Special Employment Exchange for Physically Handicapped/ Government Hospital (District and State level).
- SC/ST Certificate*
- OBC (Non-Creamy Layer) Certificate*: To consider under OBC category, candidates should upload the OBC (Non-Creamy Layer) certificate in the format prescribed by Government of India issued by competent authorities available in the website http://mtechadm.iitm.ac.in Submission of only BC or MBC certificate will not be treated as OBC category. If no valid OBC (Non-Creamy Layer) certificate copy is enclosed, the candidate will be treated under General category.
- Complete list of courses with syllabi* for ZE/ZS candidates
- Complete Grade Card(s)* till date for IIT B.Tech. candidates

* Scanned pdf file with maximum size of 2 MB. Multiple scanned pages should be combined into a single pdf file.

The upload instructions will be available on the online application website.

(f) Exercise utmost care in choosing the order of choices as the process of selection is computerized. An error in the list of choices may even lead to rejection of your application. Once the choices are made and application is submitted they can NOT be changed.

(g) Complete the application in all respects. No changes in the application are permitted after you submitted the application.

(h) Application Fee (for each application) should be paid online at the website for online application. For example,

- If a candidate wishes to apply using valid GATE 2017, GATE 2018, GATE 2019 Scores and also as an IIT Graduate, four separate applications would be required with separate application fee, i.e. three corresponding to applications for each GATE Score and one for the application as an IIT Graduate.
- If a candidate wishes to apply using valid GATE 2017, GATE 2018 and GATE 2019 Scores, three separate applications for each GATE Score with separate application fee must be submitted.

(i) After completing the online application form, download the complete application form for safe keeping and record purposes. There is **NO** need to send the hard copy to the Office of Chairman, M.Tech. Admission Committee at IIT Madras.

2.8.2 FOR SPONSORED CANDIDATES [Refer to Sections 2.5 (C) and 2.7 (C)]

Application procedure: Instructions on how to apply are available on the IIT Madras Website: www.iitm.ac.in under "NOTICES" - M.Tech. Admission 2019- Sponsored.

Apply online at https://mtechspons.iitm.ac.in
Details of Admission procedure available at the website.

Application Timeline		
Opening Date	**:**	**06 March, 2019**
Closing Date	**:**	**10 April, 2019 (23:59 hrs)**

Application Fee (To be paid online)		
SC/ ST/ PWD	**:**	**₹ 250**
All Others Candidates	**:**	**₹ 500**

In case of difficulty in applying, please contact:

The Joint Registrar
Courses Unit
Academic Section
IIT Madras, Chennai 600036
Phone No.044-22578035/8038, Fax: 044-22578042
Email: drcourses@itm.ac.in.

Before you start filling the ONLINE application form, pay attention to the following:

a) Ensure that you satisfy the minimum requirements stipulated in Section 2.7 C.

b) While filling the choices, follow column (3) (Discipline Code) of Table 1. The programme codes should not end with Y as HTTA is not applicable to the sponsored candidates.

c) Along with the application form, the candidate should enclose (not stapled) the Sponsorship Certificate, SC/ ST/ OBC (Non-Creamy Layer) certificate (if applicable) and certificate by competent Medical Board for Persons with Disability (PwD) candidates (if applicable).

d) After completing the online application form, download the complete application form for safe keeping and record purposes.

Table-1: M.Tech. Programmes in Various Departments/ Programmes				
No.	**Department/ Degree/ Programme**	**Discipline Code**	**Code (for Choices)**	**No. of Seats#**
1.	Department of Aerospace Engineering – M.Tech. in Aerospace Engineering			
	Aerospace Engineering	AE1	AE1Y	14
2.	Department of Applied Mechanics – M.Tech. in the following programmes			
	Computational and Experimental Mechanics	AM1	AM1Y	11
	Biomedical Engineering	AM2	AM2Y	7
3.	Department of Biotechnology – M.Tech. in Bioprocess Engineering			
	Bioprocess Engineering	BT1	BT1Y	11
4.	Department of Civil Engineering – M.Tech. in Civil Engineering			
	Building Technology and Construction Management	CE1	CE1Y	8
	Environmental Engineering	CE2	CE2Y	8
	Geotechnical Engineering	CE3	CE3Y	8
	Hydraulic and Water Resources Engineering	CE4	CE4Y	7
	Structural Engineering	CE5	CE5Y	13
	Transportation Engineering	CE6	CE6Y	8
5.	Department of Chemical Engineering – M.Tech. in Chemical Engineering			
	Chemical Engineering	CH1	CH1Y	28
6.	Department of Computer Science and Engineering – M.Tech. in Computer Science and Engineering			
	Computer Science and Engineering	CS1	CS1Y	58
7.	Department of Electrical Engineering - M .Tech. in Electrical Engineering			
	Communication and Signal Processing	EE1	EE1Y	19
	Power Systems and Power Electronics	EE2	EE2Y	12
	Microelectronics and VLSI Design	EE3	EE3Y	10

	Control and Instrumentation	EE4	EE4Y	9
	Microelectronics and Photonics	EE5	EE5Y	8
	Integrated Circuits and Systems	EE6	EE6Y	11
8.	Department of Mathematics – M.Tech. in Industrial Mathematics and Scientific Computing			
	Industrial Mathematics and Scientific Computing	MA1	MA1Y	22
9.	Department of Mechanical Engineering - M.Tech. in Mechanical Engineering			
	Thermal Engineering	ME1	ME1Y	38
	Mechanical Design	ME2	ME2Y	21
	Manufacturing Engineering	ME3	ME3Y	20
10.	Department of Metallurgical and Materials Engineering – M.Tech. in Metallurgical and Materials Engineering			
	Metallurgical and Materials Engineering	MM1	MM1Y	22
11.	Department of Ocean Engineering - M.Tech. in Ocean Engineering			
	Ocean Engineering	OE1	OE1Y	15
	Ocean Technology*	OE2*	OE2Y	10
12.	Department of Physics - M.Tech. in Functional Materials and Nanotechnology			
	Functional Materials and Nanotechnology	PH1	PH1Y	12
Interdisciplinary M.Tech. Programmes				
13.	M.Tech. in Catalysis Technology (Coordinating Dept. – Chemical Engineering)	CA1	CA1Y	6
14.	M.Tech. in Clinical Engineering (Coordinating Dept. - Biotechnology)	CL1	CL1Y	16
15.	M.Tech. in Petroleum Engineering (Coordinating Dept. – Ocean Engineering)	PE1	PE1Y	13
GRAND TOTAL				**445**

Y – With Half-Time Teaching Assistantship (HTTA)

[#] The number of seats is subject to change.

***** Assistantship sponsored by Earth System Science Organization - Ministry of Earth Sciences (ESSO-MoES). ESSO-MoES sponsor a maximum of 10 students for M.Tech. which may include up to 2 candidates from ESSO-NIOT.

Table2: Eligibility for Admission in various M.Tech. Programmes

Discipline of Qualifying Degree	Qualifying Discipline Code	Eligible M.Tech. 2019 Programme Codes (to which applications can be submitted) For details on additional requirements for each Programme, Refer Table3
Qualifying Disciplines in Engineering / Technology		
Aeronautical/Aerospace Engineering	AE	AE1, AM1, AM2, BT1, CL1, CS1, MA1, ME1, ME2, ME3, OE2, PE1
Agricultural Engineering	AG	BT1, CE2, CE4, CL1, CS1, PE1
Architecture (B.Arch.)	AR	BT1, CE1, CE6, CL1, CS1, PE1
Automobile Engineering	AU	AE1, AM1, BT1, CL1, CS1, ME1, ME2, ME3, PE1
Biochemical Engineering	BI	BT1, CH1, CL1, CS1, PE1
Biomedical Engineering	BM	AM2, BT1, CL1, CS1, EE4, PE1
Biotechnology	BT	BT1, CE2, CL1, CS1, MM1, PE1
Civil Engineering	CE	AE1, AM1, AM2, BT1, CE1, CE2, CE3, CE4, CE5, CE6, CL1, CS1, MA1, OE1, OE2, PE1
Chemical Engineering	CH	AE1, AM1, AM2, BT1, CA1, CE2, CH1, CL1, CS1, MA1, ME1, MM1, PE1
Ceramics	CR	BT1, CL1, CS1, MM1, PE1
Computer Science	CS	AE1, AM2, BT1, CL1, CS1, MA1, ME3, PE1
Electronics and Communications Engineering*	EC	AE1, AM2, BT1, CL1, CS1, EE1, EE2, EE3, EE4, EE5,EE6, MA1, ME3, PE1
Electrical and Electronics Engineering*	EE	AE1, AM2, BT1, CL1, CS1, EE1, EE2, EE3, EE4, EE5,EE6, MA1, ME3, PH1, PE1
Energy Engineering	EN	AE1, CL1, BT1, CS1, EE2, ME1, PE1
Engineering Physics	EP	BT1, CL1, CS1, EE1, EE2, EE3, EE4, EE5,EE6, PH1, PE1
Environmental / Environmental and Civil Engineering	EV	BT1, CE2, CE4, CH1, CL1, CS1, PE1
Industrial Engineering	IE	BT1, CL1, CS1, ME3, PE1
Instrumentation	IN	AE1, AM2, BT1, CL1, CS1, EE1, EE2, EE3, EE4, EE5,EE6, ME3, PE1
Information Technology	IT	BT1, CL1, CS1, PE1
Mechanical Engineering	ME	AE1, AM1, AM2, BT1, CE2, CE4, CL1, CS1, MA1, ME1, ME2, ME3, MM1, OE1, OE2, PE1
Manufacturing Engineering	MF	AE1, BT1, CL1, CS1, ME3, MM1, PE1
Machine Tool Engineering	ML	BT1, CL1, CS1, ME3, PE1
Metallurgical and Materials Engg.	MM	AE1, AM1, AM2, BT1, CL1, CS1, MA1, MM1, PH1, PE1
Marine Engineering	MR	BT1, CL1, CS1, ME1, PE1
Naval Architecture	NA	AE1, AM1, BT1, CL1, CS1, MA1, ME3, OE1, OE2, PE1
Petroleum Engineering	PE	BT1, CL1, CS1, ME1, PE1
Production and Industrial Engg.	PI	BT1, CL1, CS1, ME3, PE1
Production Engineering	PR	AE1, AM1, BT1, CL1, CS1, ME3, MM1, PE1
Other Disciplines in Engineering/Technology	ZE	AE1, AM1, AM2, BT1, CA1, CE1, CE2, CE3, CE4, CE5, CE6, CH1, CL1, CS1, EE1, EE2, EE3, EE4, EE5,EE6, ME1, ME2, ME3, MM1, OE1, OE2, PH1, PE1
Qualifying Disciplines in Science		
Chemistry	CY	CA1, CS1, MM1, PH1, PE1
Geology and Geophysics	GG	CS1, PE1
Mathematics /Applied Mathematics	MA	CS1, MA1, PE1
M.Sc. Computer Science	MC	CS1, PE1
Master of Computer Applications	MP	CS1, PE1
Materials Science	MS	CS1, MM1, PH1, PE1
Nanotechnology	NT	CS1, MM1, PH1, PE1
Operations Research	OR	CS1, PE1
Physics/Applied Physics	PH	CS1, EE5, MA1, MM1, PH1 , PE1
Statistics	ST	CS1, PE1
Master's Degree in Life Sciences	ZL	CS1, PE1
Other Disciplines in Science	ZS	AE1, CA1, CH1, CS1, ME1, ME2, MM1, PE1

*Applicant of Electrical Engineering at IITs can choose either EE or EC.

Table 3: M.Tech. Programmes: Eligible Disciplines, Seats available[#] and Additional Requirements

S.No.	Programme Code	Eligible Discipline Codes	HTTA	Additional Requirements
1.	AE1	AE	3	GATE Paper must be AE, CE, ME or XE (Test/Interview for Qualifying Discipline ZE, GATE paper XE and Associate Membership holders)
		ME	8*	
		AU, CE, CH, EN, MF, MM, NA, PR	2*	
		CS, EC, EE, IN, ZE,ZS	1*	
2.	AM1	AE, AU, CE, CH, ME, MM, NA, PR, ZE	11	GATE Paper must be AE, CE, CH, ME, MT or XE (Test/Interview for Degree obtained through Distance education / correspondence mode/ Qualifying Discipline ZE)
	AM2	BM	2	GATE Paper must be AE, CE, CH, CS, EC, EE, IN, ME, MT or XE (Test/Interview for Degree obtained through Distance education / correspondence mode / Qualifying Discipline ZE)
		IN	2*	
		AE, CE, CH, CS, EC, EE, ME, MM, ZE	3*	
3.	BT1	AE, AG, AR, AU, BI, BM, BT, CE, CH, CR, CS, EC, EE, EN, EP, EV, IE, IN, IT, ME, MF, ML, MM, MR, NA, PE, PI, PR, ZE	11	GATE Paper must be BT or CH
4.	CA1	CH, ZE	4	GATE Paper must be CH or CY (Test/Interview for Degree obtained through Distance education / correspondence mode)
		CY, ZS	2	
5.	CE1	CE	5	GATE Paper must be AR or CE
		AR	2	
		ZE	1*	
	CE2	CE	6	GATE Paper must be AG, BT, CE, CH, ME or XE
		AG, BT, CH, EV, ME, ZE	2*	
	CE3	CE	7	GATE Paper must be CE
		ZE	1*	
	CE4	CE	4	GATE Paper must be AG, CE, ME or XE
		AG	2*	
		EV, ME, ZE	1*	
	CE5	CE	12	GATE Paper must be CE
		ZE	1*	
	CE6	CE	6	GATE Paper must be AR or CE
		AR, ZE	2*	
6.	CH1	BI, CH, EV, ZE, ZS	28	GATE Paper must be CH (Test/Interview for Degree obtained through Distance education / correspondence mode)
7.	CL1	AE, AG, AR, AU, BI, BM, BT, CE, CH, CR, CS, EC, EE, EN, EP, EV, IE, IN, IT, ME, MF, ML, MM, MR, NA, PE, PI, PR, ZE	16	GATE Paper must be AE, BT, CE, CH, CS, EC, EE, IN, ME, MN, MT, PI, TF or XE

8.	CS1	All Disciplines of Qualifying Degree	58	GATE Paper must be CS (Test/Interview for Associate Membership holders)
9.	EE1	EC, EE, EP, IN, ZE	19	GATE Paper must be EC (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
	EE2	EC, EE, EN, EP, IN, ZE	12	GATE Paper must be EE (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
	EE3	EC, EE, EP, IN, ZE	10	GATE Paper must be EC (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
	EE4	IN, BM, ZE	4	GATE Paper must be IN (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
		BM, EC, EE, EP, ZE	5	GATE Paper must be EC or EE (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
	EE5	PH, EP	1	GATE Paper must be PH, EC, EE or IN (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
		EC, EE, IN, ZE	7	GATE Paper must be EC, EE or IN (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
	EE6	EE,EC,EP,IN,ZE	11	GATE Paper must be EC, EE, IN (Test/Interview for Qualifying Discipline ZE and Associate Membership holders)
10.	MA1	MA	14	Any GATE paper other than XE and XL, (Test/ Interview for Degree holders obtained through Distance education / correspondence mode and Associate Membership holders)
		PH	4*	
		AE, CE, CH, CS, EC, EE, ME, MM, NA	4*	
11.	ME1	ME	36	Test/Interview for Qualifying Discipline ZE/ZS and Associate Membership holders
		AE, AU, CH, EN, MR, PE, ZE, ZS	2*	
	ME2	ME	19	Test/Interview for Qualifying Discipline ZE/ZS and Associate Membership holders
		AE, AU, ZE, ZS	2*	
	ME3	ME	18	Test/Interview for Qualifying Discipline ZE and Associate Membership holders
		AE, AU, CS, EC, EE, IE, IN, MF, ML, NA, PI, PR, ZE	2*	
12.	MM1	MM	17	Test/ Interview for Degree obtained through Distance education / correspondence mode / Qualifying Discipline ZE/ZS
		BT, CH, CR, CY, ME, MF, MS, NT, PH, PR, ZE, ZS	5*	
13.	OE1	CE, ME, NA, ZE	15	GATE Paper must be CE, ME XE (Test/ Interview for Degree obtained through Distance education / correspondence mode / Qualifying Discipline ZE / Associate Membership holders)
14.	OE2	AE, CE, ME, NA, ZE	10**	GATE Paper must be AE, CE, ME XE (Test/ Interview for Degree obtained through Distance education / correspondence mode / Qualifying Discipline ZE / Associate Membership holders)
15.	PE1	All Disciplines of Qualifying Degree	13	GATE Paper must be PE (Test/ Interview for Degree obtained through Distance education / correspondence mode / Associate Membership holders)
16.	PH1	PH	7	Curriculum must match for Qualifying discipline ZE
		EP, NT	3*	
		CY, EE , MM, MS, ZE	2*	

The number of seats is subject to change.

* The indicated number will be considered as the maximum number of available seats for that group of eligible disciplines and the seats will be allotted from the combined merit list (along with discipline mentioned in the first row)

** Assistantship sponsored by Earth System Science Organization-Ministry of Earth Sciences (ESSO-MoES)

- ZE/ZS candidates must upload a complete list of courses studied during their degree Programme with syllabi. They may be considered for admission to the Programmes relevant to the discipline of their qualifying degree as decided by the concerned Departments. If they are considered, they may have to take suitability test/interview.

- Candidates with degrees obtained through Distance Education/Correspondence Mode must take test/ interview for the following Programmes: AM1, AM2, CA1, CH1, MA1, MM1, OE1, OE2 and PE1.

- Applications of candidates with B.Tech. From IITs, applying for admission without GATE Score will be reviewed by the respective Department(s). They must upload all Grade Card(s) pertaining to the B.Tech. Programme at the website.

Table-4: Eligible Programmes for various combinations of Qualifying Disciplines and GATE Papers

GATE Paper/ Qual Disp:	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
AE	AE1 AM1 AM2 CL1 MA1 ME1 ME2 ME3 OE2	MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3	BT1 CL1 MA1 ME1 ME2 ME3	AE1 AM1 AM2 CL1 MA1 ME1 ME2 ME3 OE2	AM1 AM2 BT1 CL1 MA1 ME1 ME2 ME3	AM2 CL1 CS1 MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3	AM2 CL1 MA1 ME1 ME2 ME3	AM2 CL1 MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3	AM2 CL1 MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3	AE1 AM1 AM2 CL1 MA1 ME1 ME2 ME3 OE2	CL1 MA1 ME1 ME2 ME3	AM1 AM2 CL1 MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3 PE1	MA1 ME1 ME2 ME3	CL1 MA1 ME1 ME2 ME3	MA1 ME1 ME2 ME3	CL1 MA1 ME1 ME2 ME3	AE1 AM1 AM2 CL1 MA1 ME1 ME2 ME3 OE2	MA1 ME1 ME2 ME3
AG	CL1	CE2 CE4		BT1 CE2 CL1	CE2 CE4 CL1	BT1 CE2 CL1	CL1 CS1		CL1	CL1			CL1		CE2 CE4 CL1	CL1	CL1	PE1		CL1		CL1	CE2 CE4 CL1	
AR	CL1		CE1 CE6	BT1 CL1	CE1 CE6 CL1	BT1 CL1	CL1 CS1		CL1	CL1			CL1		CL1	CL1	CL1	PE1		CL1		CL1	CL1	
AU	AE1 AM1 CL1 ME1 ME2 ME3	ME1 ME2 ME3	ME1 ME2 ME3	BT1 CL1 ME1 ME2 ME3	AE1 AM1 CL1 ME1 ME2 ME3	AM1 BT1 CL1 ME1 ME2 ME3	CL1 CS1 ME1 ME2 ME3	ME1 ME2 ME3	CL1 ME1 ME2 ME3	CL1 ME1 ME2 ME3	ME1 ME2 ME3	ME1 ME2 ME3	CL1 ME1 ME2 ME3	ME1 ME2 ME3	AE1 AM1 CL1 ME1 ME2 ME3	CL1 ME1 ME2 ME3	AM1 CL1 ME1 ME2 ME3	ME1 ME2 ME3 PE1	ME1 ME2 ME3	CL1 ME1 ME2 ME3	ME1 ME2 ME3	CL1 ME1 ME2 ME3	AE1 AM1 CL1 ME1 ME2 ME3	ME1 ME2 ME3
BI	CL1			BT1 CL1	CL1	BT1 CH1 CL1	CL1 CS1		CL1	CL1			CL1		CL1	CL1	CL1	PE1		CL1		CL1	CL1	
BM	AM2 CL1			BT1 CL1	AM2 CL1	AM2 BT1 CL1	AM2 CL1 CS1		AM2 CL1 EE4	AM2 CL1 EE4			AM2 CL1 EE4		AM2 CL1	CL1	AM2 CL1	PE1		CL1		CL1	AM2 CL1	

GATE → Paper/ Qual Disp: ↓	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
BT	CL1 MM1	CE2 MM1	MM1	BT1 CE2 CL1 MM1	CE2 CL1 MM1	BT1 CE2 CL1 MM1	CL1 CS1 MM1	MM1	CL1 MM1	CL1 MM1	MM1	MM1	CL1 MM1	MM1	CE2 CL1 MM1	CL1 MM1	CL1 MM1	MM1 PE1	MM1	CL1 MM1	MM1	CL1 MM1	CE2 CL1 MM1	MM1
CE	AE1 AM1 AM2 CL1 MA1 OE2	CE2 CE4 MA1	CE1 CE6 MA1	BT1 CE2 CL1 MA1	AE1 AM1 AM2 CE1 CE2 CE3 CE4 CE5 CE6 CL1 MA1 OE1 OE2	AM1 AM2 BT1 CE2 CL1 MA1	AM2 CL1 CS1 MA1	MA1	AM2 CL1 MA1	AM2 CL1 MA1	MA1	MA1	AM2 CL1 MA1	MA1	AE1 AM1 AM2 CE2 CE4 CL1 MA1 OE1 OE2	CL1 MA1	AM1 AM2 CL1 MA1	MA1 PE1	MA1	CL1 MA1	MA1	CL1 MA1	AE1 AM1 AM2 CE2 CE4 CL1 MA1 OE1 OE2	MA1
CH	AE1 AM1 AM2 CL1 MA1 ME1 MM1	CE2 MA1 ME1 MM1	MA1 ME1 MM1	BT1 CE2 CL1 MA1 ME1 MM1	AE1 AM1 AM2 CE2 CL1 MA1 ME1 MM1	AM1 AM2 BT1 CA1 CE2 CH1 CL1 MA1 ME1 MM1	AM2 CL1 CS1 MA1 ME1 MM1	CA1 MA1 ME1 MM1	AM2 CL1 MA1 ME1 MM1	AM2 CL1 MA1 ME1 MM1	MA1 ME1 MM1	MA1 ME1 MM1	AM2 CL1 MA1 ME1 MM1	MA1 ME1 MM1	AE1 AM1 AM2 CE2 CL1 MA1 ME1 MM1	CL1 MA1 ME1 MM1	AM1 AM2 CL1 MA1 ME1 MM1	MA1 ME1 MM1 PE1	MA1 ME1 MM1	CL1 MA1 ME1 MM1	MA1 ME1 MM1	CL1 MA1 ME1 MM1	AE1 AM1 AM2 CE2 CL1 MA1 ME1 MM1	MA1 ME1 MM1
CR	CL1 MM1	MM1	MM1	BT1 CL1 MM1	CL1 MM1	BT1 CL1 MM1	CL1 CS1 MM1	MM1	CL1 MM1	CL1 MM1	MM1	MM1	CL1 MM1	MM1	CL1 MM1	CL1 MM1	CL1 MM1	MM1 PE1	MM1	CL1 MM1	MM1	CL1 MM1	CL1 MM1	MM1

GATE Paper/ Qual Disp:	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
CS	AE1 AM2 CL1 MA1 ME3	MA1 ME3	MA1 ME3	BT1 CL1 MA1 ME3	AE1 AM2 CL1 MA1 ME3	AM2 BT1 CL1 MA1 ME3	AM2 CL1 CS1 MA1 ME3	MA1 ME3	AM2 CL1 MA1 ME3	AM2 CL1 MA1 ME3	MA1 ME3	MA1 ME3	AM2 CL1 MA1 ME3	MA1 ME3	AE1 AM2 CL1 MA1 ME3	CL1 MA1 ME3	AM2 CL1 MA1 ME3	MA1 ME3 PE1	MA1 ME3	CL1 MA1 ME3	MA1 ME3	CL1 MA1 ME3	AE1 AM2 CL1 MA1 ME3	MA1 ME3
EC	AE1 AM2 CL1 MA1 ME3	MA1 ME3	MA1 ME3	BT1 CL1 MA1 ME3	AE1 AM2 CL1 MA1 ME3	AM2 BT1 CL1 MA1 ME3	AM2 CL1 CS1 MA1 ME3	MA1 ME3	AM2 CL1 EE1 EE3 EE4 EE5 EE6 MA1 ME3	AM2 CL1 EE2 EE4 EE5 EE6 MA1 ME3	MA1 ME3	MA1 ME3	AM2 CL1 EE5 EE6 MA1 ME3	MA1 ME3	AE1 AM2 CL1 MA1 ME3	CL1 MA1 ME3	AM2 CL1 MA1 ME3	MA1 ME3 PE1	MA1 ME3	CL1 MA1 ME3	MA1 ME3	CL1 MA1 ME3	AE1 AM2 CL1 MA1 ME3	MA1 ME3
EE	AE1 AM2 CL1 MA1 ME3 PH1	MA1 ME3 PH1	MA1 ME3 PH1	BT1 CL1 MA1 ME3 PH1	AE1 AM2 CL1 MA1 ME3 PH1	AM2 BT1 CL1 MA1 ME3 PH1	AM2 CL1 CS1 MA1 ME3 PH1	MA1 ME3 PH1	AM2 CL1 EE1 EE3 EE4 EE5 EE6 MA1 ME3 PH1	AM2 CL1 EE2 EE4 EE5 EE6 MA1 ME3 PH1	MA1 ME3 PH1	MA1 ME3 PH1	AM2 CL1 EE5 EE6 MA1 ME3 PH1	MA1 ME3 PH1	AE1 AM2 CL1 MA1 ME3 PH1	CL1 MA1 ME3 PH1	AM2 CL1 MA1 ME3 PH1	MA1 ME3 PH1 PE1	MA1 ME3 PH1	CL1 MA1 ME3 PH1	MA1 ME3 PH1	CL1 MA1 ME3 PH1	AE1 AM2 CL1 MA1 ME3 PH1	MA1 ME3 PH1
EN	AE1 CL1 ME1	ME1	ME1	BT1 CL1 ME1	AE1 CL1 ME1	BT1 CL1 ME1	CL1 CS1 ME1	ME1	CL1 ME1	CL1 EE2 ME1	ME1	ME1	CL1 ME1	ME1	AE1 CL1 ME1	CL1 ME1	CL1 ME1	ME1 PE1	ME1	CL1 ME1	ME1	CL1 ME1	AE1 CL1 ME1	ME1
EP	CL1 PH1	PH1	PH1	BT1 CL1 PH1	CL1 PH1	BT1 CL1 PH1	CL1 CS1 PH1	PH1	CL1 EE1 EE3 EE4 EE5 EE6 PH1	CL1 EE2 EE4 EE5 EE6 PH1	PH1	PH1	CL1 EE5 EE6 PH1	PH1	CL1 PH1	CL1 PH1	CL1 PH1	PH1 PE1	EE5 PH1	CL1 PH1	PH1	CL1 PH1	CL1 PH1	PH1

GATE → Paper/ Qual Disp: ↓	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
EV	CL1	CE2 CE4		BT1 CE2 CL1	CE2 CE4 CL1	BT1 CE2 CH1 CL1	CL1 CS1		CL1	CL1			CL1		CE2 CE4 CL1	CL1	CL1	PE1		CL1		CL1	CE2 CE4 CL1	
IE	CL1 ME3	ME3	ME3	BT1 CL1 ME3	CL1 ME3	BT1 CL1 ME3	CL1 CS1 ME3	ME3	CL1 ME3	CL1 ME3	ME3	ME3	CL1 ME3	ME3	CL1 ME3	CL1 ME3	CL1 ME3	ME3 PE1	ME3	CL1 ME3	ME3	CL1 ME3	CL1 ME3	ME3
IN	AE1 AM2 CL1 ME3	ME3	ME3	BT1 CL1 ME3	AE1 AM2 CL1 ME3	AM2 BT1 CL1 ME3	AM2 CL1 CS1 ME3	ME3	AM2 CL1 EE1 EE3 EE5 EE6 ME3	AM2 CL1 EE2 EE5 EE6 ME3	ME3	ME3	AM2 CL1 EE4 EE5 EE6 ME3	ME3	AE1 AM2 CL1 ME3	CL1 ME3	AM2 CL1 ME3	ME3 PE1	ME3	CL1 ME3	ME3	CL1 ME3	AE1 AM2 CL1 ME3	ME3
IT	CL1			BT1 CL1	CL1	BT1 CL1	CL1 CS1		CL1	CL1			CL1		CL1	CL1	CL1	PE1		CL1		CL1	CL1	
ME	AE1 AM1 AM2 CL1 MA1 ME1 ME2 ME3 MM1 OE2	CE2 CE4 MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1	BT1 CE2 CL1 MA1 ME1 ME2 ME3 MM1	AE1 AM1 AM2 CE2 CE4 CL1 MA1 ME1 ME2 ME3 MM1 OE1 OE2	AM1 AM2 BT1 CE2 CL1 MA1 ME1 ME2 ME3 MM1	AM2 CL1 CS1 MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1	AM2 CL1 MA1 ME1 ME2 ME3 MM1	AM2 CL1 MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1	AM2 CL1 MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1	AE1 AM1 AM2 CE2 CE4 CL1 MA1 ME1 ME2 ME3 MM1 OE1 OE2	CL1 MA1 ME1 ME2 ME3 MM1	AM1 AM2 CL1 MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1 PE1	MA1 ME1 ME2 ME3 MM1	CL1 MA1 ME1 ME2 ME3 MM1	MA1 ME1 ME2 ME3 MM1	CL1 MA1 ME1 ME2 ME3 MM1	AE1 AM1 AM2 CE2 CE4 CL1 MA1 ME1 ME2 ME3 MM1 OE1 OE2	MA1 ME1 ME2 ME3 MM1
MF	AE1 CL1 ME3	ME3 MM1	ME3 MM1	BT1 CL1 ME3	AE1 CL1 ME3	BT1 CL1 ME3	CL1 CS1 ME3	ME3 MM1	CL1 ME3 MM1	CL1 ME3 MM1	ME3 MM1	ME3 MM1	CL1 ME3 MM1	ME3 MM1	AE1 CL1 ME3	CL1 ME3 MM1	CL1 ME3 MM1	ME3 MM1 PE1	ME3 MM1	CL1 ME3 MM1	ME3 MM1	CL1 ME3 MM1	AE1 CL1 ME3	ME3 MM1

GATE Paper/ Qual Disp:	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
	MM1			MM1	MM1	MM1	MM1								MM1								MM1	
ML	CL1 ME3	ME3	ME3	BT1 CL1 ME3	CL1 ME3	BT1 CL1 ME3	CL1 CS1 ME3	ME3	CL1 ME3	CL1 ME3	ME3	ME3	CL1 ME3	ME3	CL1 ME3	CL1 ME3	CL1 ME3	ME3 PE1	ME3	CL1 ME3	ME3	CL1 ME3	CL1 ME3	ME3
MM	AE1 AM1 AM2 CL1 MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	BT1 CL1 MA1 MM1 PH1	AE1 AM1 AM2 CL1 MA1 MM1 PH1	AM1 AM2 BT1 CL1 MA1 MM1 PH1	AM2 CL1 CS1 MA1 MM1 PH1	MA1 MM1 PH1	AM2 CL1 MA1 MM1 PH1	AM2 CL1 MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	AM2 CL1 MA1 MM1 PH1	MA1 MM1 PH1	AE1 AM1 AM2 CL1 MA1 MM1 PH1	CL1 MA1 MM1 PH1	AM1 AM2 CL1 MA1 MM1 PH1	MA1 MM1 PH1 PE1	MA1 MM1 PH1	CL1 MA1 MM1 PH1	MA1 MM1 PH1	CL1 MA1 MM1 PH1	AE1 AM1 AM2 CL1 MA1 MM1 PH1	MA1 MM1 PH1
MR	CL1 ME1	ME1	ME1	BT1 CL1 ME1	CL1 ME1	BT1 CL1 ME1	CL1 CS1 ME1	ME1	CL1 ME1	CL1 ME1	ME1	ME1	CL1 ME1	ME1	CL1 ME1	CL1 ME1	CL1 ME1	ME1 PE1	ME1	CL1 ME1	ME1	CL1 ME1	CL1 ME1	ME1
NA	AE1 AM1 CL1 MA1 ME3 OE2	MA1 ME3	MA1 ME3	BT1 CL1 MA1 ME3	AE1 AM1 CL1 MA1 ME3 OE1 OE2	AM1 BT1 CL1 MA1 ME3	CL1 CS1 MA1 ME3	MA1 ME3	CL1 MA1 ME3	CL1 MA1 ME3	MA1 ME3	MA1 ME3	CL1 MA1 ME3	MA1 ME3	AE1 AM1 CL1 MA1 ME3 OE1 OE2	CL1 MA1 ME3	AM1 CL1 MA1 ME3	MA1 ME3 PE1	MA1 ME3	CL1 MA1 ME3	MA1 ME3	CL1 MA1 ME3	AE1 AM1 CL1 MA1 ME3 OE1 OE2	MA1 ME3
PE	CL1 ME1	ME1	ME1	BT1 CL1 ME1	CL1 ME1	BT1 CL1 ME1	CL1 CS1 ME1	ME1	CL1 ME1	CL1 ME1	ME1	ME1	CL1 ME1	ME1	CL1 ME1	CL1 ME1	CL1 ME1	ME1 PE1	ME1	CL1 ME1	ME1	CL1 ME1	CL1 ME1	ME1
PI	CL1 ME3	ME3	ME3	BT1 CL1 ME3	CL1 ME3	BT1 CL1 ME3	CL1 CS1 ME3	ME3	CL1 ME3	CL1 ME3	ME3	ME3	CL1 ME3	ME3	CL1 ME3	CL1 ME3	CL1 ME3	ME3 PE1	ME3	CL1 ME3	ME3	CL1 ME3	CL1 ME3	ME3
PR	AE1 AM1 CL1 ME3 MM1	ME3 MM1	ME3 MM1	BT1 CL1 ME3 MM1	AE1 AM1 CL1 ME3 MM1	BT1 AM1 CL1 ME3 MM1	CL1 CS1 ME3 MM1	ME3 MM1	CL1 ME3 MM1	CL1 ME3 MM1	ME3 MM1	ME3 MM1	CL1 ME3 MM1	ME3 MM1	AE1 AM1 CL1 ME3 MM1	CL1 ME3 MM1	AM1 CL1 ME3 MM1	ME3 MM1 PE1	ME3 MM1	CL1 ME3 MM1	ME3 MM1	CL1 ME3 MM1	AE1 AM1 CL1 ME3 MM1	ME3 MM1

GATE → Paper/ Qual Disp: ↓	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
ZE	AE1 AM1 AM2 CL1 ME1 ME2 ME3 MM1 OE2 PH1	CE2 CE4 ME1 ME2 ME3 MM1 PH1	CE1 CE6 ME1 ME2 ME3 MM1 PH1	BT1 CE2 CL1 ME1 ME2 ME3 MM1 PH1	AE1 AM1 AM2 CE1 CE2 CE3 CE4 CE5 CE6 CL1 ME1 ME2 ME3 MM1 OE1 OE2 PH1	AM1 AM2 BT1 CA1 CE2 CH1 CL1 ME1 ME2 ME3 MM1 PH1	AM2 CL1 CS1 ME1 ME2 ME3 MM1 PH1	CA1 ME1 ME2 ME3 MM1 PH1	AM2 CL1 EE1 EE3 EE4 EE5 EE6 ME1 ME2 ME3 MM1 PH1	AM2 CL1 EE2 EE4 EE5 EE6 ME1 ME2 ME3 MM1 PH1	ME1 ME2 ME3 MM1 PH1	ME1 ME2 ME3 MM1 PH1	AM2 CL1 EE4 EE5 EE6 ME1 ME2 ME3 MM1 PH1	ME1 ME2 ME3 MM1 PH1	AE1 AM1 AM2 CE2 CE4 CL1 ME1 ME2 ME3 MM1 OE1 OE2 PH1	CL1 ME1 ME2 ME3 MM1 PH1	AM1 AM2 CL1 ME1 ME2 ME3 MM1 PH1	ME1 ME2 ME3 MM1 PH1 PE1	ME1 ME2 ME3 MM1 PH1	CL1 ME1 ME2 ME3 MM1 PH1	ME1 ME2 ME3 MM1 PH1	CL1 ME1 ME2 ME3 MM1 PH1	AE1 AM1 AM2 CE2 CE4 CL1 ME1 ME2 ME3 MM1 OE1 OE2 PH1	ME1 ME2 ME3 MM1 PH1
CY	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	CA1 MM1 PH1	CS1 MM1 PH1	CA1 MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1 PE1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1
GG							CS1											PE1						
MA	MA1	MA1	MA1	MA1	MA1	MA1	CS1 MA1	MA1	MA1	MA1	MA1	MA1	MA1	MA1	MA1	MA1	MA1	MA1 PE1	MA1	MA1	MA1	MA1	MA1	MA1
MC							CS1											PE1						
MP							CS1											PE1						
MS	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	CS1 MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1 PE1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1

GATE Paper/ Qual Disp:	AE	AG	AR	BT	CE	CH	CS	CY	EC	EE	EY	GG	IN	MA	ME	MN	MT	PE	PH	PI	ST	TF	XE	XL
NT	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	CS1 MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1 PE1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1	MM1 PH1
OR							CS1											PE1						
PH	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	CS1 MA1 MM1 PH1	MA1 MM1 PH1	EE5 MA1 MM1 PH1	EE5 MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	EE5 MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1 PE1	EE5 MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1	MA1 MM1 PH1
ST							CS1											PE1						
ZL							CS1											PE1						
ZS	AE1 ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	AE1 ME1 ME2 MM1	CA1 CH1 ME1 ME2 MM1	CS1 ME1 ME2 MM1	CA1 ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	AE1 ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1 PE1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	ME1 ME2 MM1	AE1 ME1 ME2 MM1	ME1 ME2 MM1

Important Note: ***N seats are NOT available for some departments/qualifying disciplines. Please refer to Table 3 of the Brochure for details

2.9 Admission procedure

2.9.1 GATE qualified Indian Nationals

Admission to candidates (who are not required to take Suitability Test/ Interview) will be finalized strictly in the order of merit as per the GATE Score (CGPA & Department Review for IIT Graduates) and on the basis of choices given by them in the application.

Candidates requiring Suitability Test/ Interview shall report at the office of the Head of the respective Department as per the following schedule:

Date of Suitability Test/ Interview 27th April, 2019 (Saturday) Time: 8:30 a.m.

Persons with Disability (PwD): For PwD candidates with any category of disability (viz., blindness or low vision, hearing impairment, loco motor disability or cerebral palsy), benefit will be given to only those who have at least 40% permanent physical impairment in relation to a body part/ system/ extremity/ whole body, etc. Such candidates must upload, along with the Application Form, the **Certificate of Disability** from the authorized medical board attached to one of the following: Vocational Rehabilitation Centre (VRC) for Physically Handicapped persons /Special Employment Exchange for Physically Handicapped/ Government Hospital (District and State level).

First set of offers are likely to be sent by 10th May 2019 (Friday). The candidates, who accept the offer, have to make online payment of Institute Fees within the stipulated date. Second and subsequent rounds of offers may be made depending on the availability of the seats. Online Procedural Details are available at the M. Tech. Admission Portal. In the final round, seats unfilled, if any, within a Department offering multiple Programmes will be re-distributed to other Programmes within the Department.

- Upgrading

There is a possibility of upgrading the choice(s) of the candidates who have already accepted the offer of admission, depending upon the subsequent availability of vacancies.

- Additional Round(s) of Offer after the Admission Day (22nd July, 2019, Monday)

When the candidates who are given admission during first, second and subsequent rounds of offers withdraw from the programmes, the seats get vacant. Though subsequent round(s) of offers try to fill these vacancies, there is a possibility that some seats may get vacant after the Admission Day (22nd July 2019: Monday). If the seats fall vacant, Additional Round of Offers will be conducted on 23rd / 24th July 2019 (Tuesday / Wednesday) to fill these remaining vacancies. Candidates who could not secure admission in the first, second and subsequent rounds of offers before the Admission Day, will be considered for this Round. Similar to the last year, candidates are NOT required to report In-Person for the Additional Round. The Additional Round(s) will be similar to the round of offers conducted before the

Admission Day. Please note that Additional Round of offers after the Admission Day will be operated only when there are any unfilled seats, and its operational details will be available on the M. Tech Admission site: **http://mtechadm.iitm.ac.in**

Reporting for Admission

GATE qualified candidates and IIT B.Tech. graduates who accept the offer of admission must produce completion certificate of their qualifying degree examination and join the Institute on 22nd July, 2019 (Monday) forenoon. Failure to do so will result in cancellation of the offer of admission. Sponsored candidates also should report for admission on 22nd July, 2019 (Monday) afternoon. Selected candidates will have to pay various fees and deposit amounts as applicable. The candidate must produce a medical fitness certificate from a Registered Medical Practitioner in the format which can be downloaded along with the letter of offer of admission. In all matters relating to admission, the decision of the M.Tech. Admission Committee will be final.

2.10 Payment of Admission Fee and Refund Policy

2.10.1 For Indian Nationals:

When admission is offered and accepted by candidates, the candidates have to pay an Institute Fee of **₹20560/-** in the case of General/ OBC candidates and **₹15560/-** in the case of SC/ ST/ PwD candidates, using the online payment facility available on the website. In case a candidate withdraws his/her offer of Admission, a Processing Fee of **₹1000/-** will be retained by the Institute and the remaining amount would be refunded. However, if a candidate accepts the offer of admission made in the Additional Rounds (**23rd or 24th July, 2019**), and pays the Institute Fee, then no refund of Institute Fee will be made on withdrawal of admission.

Table-5: Institute Fee to be paid using online payment facility

Category/ Group	Day Scholar	Hosteller
General & OBC per semester	**₹20810**	**₹20560**
SC, ST and PwD per semester	**₹15810**	**₹15560**

Hostellers have to pay additionally **₹24,280/-** to the Chairman, Council of Wardens during the time of admission (Refer Table 6D) through the website www.ccw.iitm.ac.in (or) www.dost.iitm.ac.in using any bank Debit / Credit Card / Net Banking.

2.11 Details of Fees and Deposits

The break-up of various fees and deposits for all the four semesters are given in Table 6. Fees are subjected to revision from time to time as decided by the Institute.

Table 6: Fees and Deposits

A. One Time Payment

No.	Details of Fees	July-Nov 2019 (₹)
1.	Admission fee	150
2.	Grade Card	150
3.	Provisional Certificate	100
4.	Medical Examination Fee	100
5.	Student Welfare Fund	1000
6.	Modernisation Fee	500
7.	Alumni Life Membership(NS)	1500
8.	Publication(NS)	250
	Total – A	3750

B. Semester Fees

No.	Details of Fees	July- Nov 2019 (₹)	Jan-May 2020 (₹)	July-Nov 2020 (₹)	Jan- May 2021 (₹)
1.	Tuition Fee+	5000#	5000#	5000#	5000#
2.	Examination Fee	300	300	300	300
3.	Registration & Enrolment	300	300	300	300
4.	Gymkhana	1250	1250	1250	1250
5.	Medical Fee	700	700	700	700
6.	Hostel Seat Rent*	5000	5000	5000**	5000**
7.	Fan, Electricity & Water*	750	750	750	750
8.	Student Wellness Fee	100	100	100	100
9.	Medical Insurance	**1,410****	-	**1,410****	-
	Total - B	**14810**	**13400**	**14810**	**13400**

C. Deposits (Refundable)

1.	Institute Deposit (₹)	1000
2.	Library Deposit (₹)	1000
	Total – C	**2000**

D. Hostel Fees & Mess Charges per Semester (Payable to the Chairman, Council of Wardens)

No.	Details of Fees	July- Nov 2019 (₹)	Jan-May 2020 (₹)	July-Nov 2020 (₹)	Jan- May 2021 (₹)
1.	Hostel Admission Fee	**250**	**250**	**250**	**250**
2.	Hostel Deposit (NS) (Refundable)*	3000	-	-	-
3.	Advance Dining Charges**	**13530**	**13530**	**13530**	**13530**
4.	Establishment 'A' Charges***	6000	6000	6000	6000
5.	Establishment 'B' Charges**	1500	1500	1500	1500
	Total - D	**24280**	**21280**	**21280**	**21280**

Notes/ Exceptions

(NS) Non-Statutory Fees

+ SC, ST, PwD Students are exempted from payment of Tuition Fee.

M.Tech. Sponsored candidates have to pay tuition Fee of ₹ 20,000/- additionally per semester.

* Only for Hostellers

** Subject to revision

*** Day Scholars also have to pay this amount.

3. M.TECH. PROGRAMME HIGHLIGHTS

I. DEPARTMENT OF AEROSPACE ENGINEERING

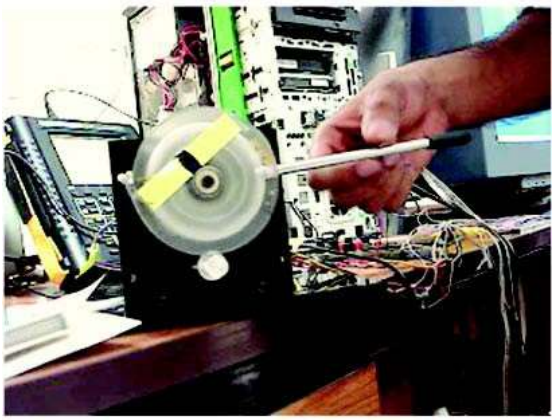
M.Tech. in Aerospace Engineering (AE1)

This Programme is based on a common core in the areas of aerodynamics, space technology, design, propulsion and structures. A number of elective courses are available for specialisation in areas related to aerospace engineering. Candidates with specialisations other than aeronautical/ aerospace engineering have to undergo certain basic core courses during the first semester. There is provision for aeronautical/ aerospace graduates to opt for other courses in lieu of basic core courses. Students also can choose elective courses offered by other departments which are of interest and have a direct bearing on the Programme of studies. Computational facilities with appropriate software support as well as experimental facilities in aerodynamics, propulsion, guidance/ control and structures are available for project work.

More information about the department is available at the following website.
http://www.ae.iitm.ac.in/files/mtech.htm

II. DEPARTMENT OF APPLIED MECHANICS

M.Tech. in Computational and Experimental Mechanics (AM1) and M.Tech. in Biomedical Engineering (AM2)



Applied Mechanics is the only department in IIT Madras dedicated to Post Graduate programs in engineering completely. In view of its unique interdisciplinary academic activities candidates from wide range of Engineering disciplines (see Tables 2 and 3) are eligible to apply.

Computational and Experimental Mechanics (AM1):

First Semester is common for all the students of this specialization. Based on the performance in the first semester and their preference, students will be allotted to either of these two groups.

Fluid Mechanics covers turbulence, hydrodynamic instability, convection, fluid-

structure interaction, bio-fluid mechanics, waves, micro scale flows, CFD, etc. Solid Mechanics covers continuum theory, plates and shells, plasticity, fracture mechanics, modeling of materials, dynamics of structures, finite and boundary element methods, experimental stress analysis, digital photo mechanics. The students can choose analytical, computational and experimental approaches for their project work.

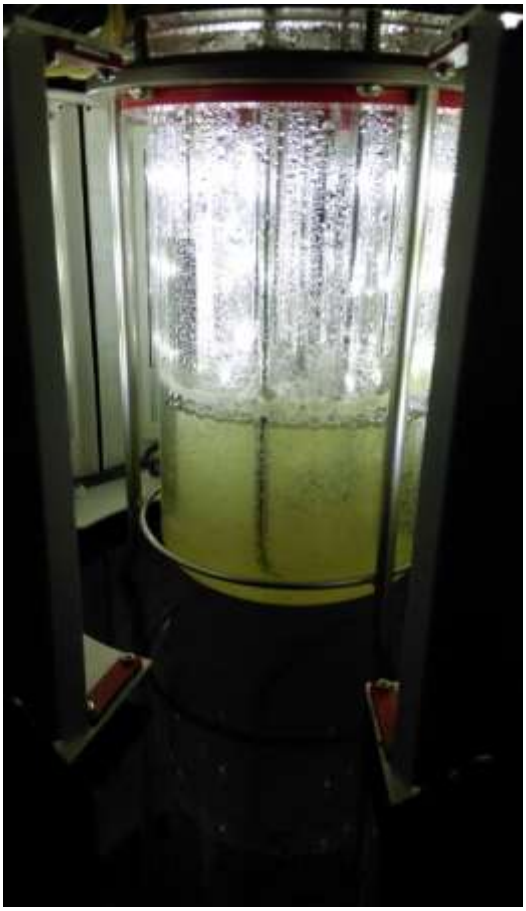
Biomedical Engineering (AM2)

Closing the gap between the engineering and medicine, this specialization covers science and technology to understand the complexity of human physiology and pathology and to design and develop new diagnostic and rehabilitation techniques. A number of courses have been designed towards this objective and the students can undertake projects in medical instrumentations, imaging, signal processing, biomechanics, rehabilitation, haptics, etc.

More information about the department is available at the following website.
https://apm.iitm.ac.in/mtech.html

III. DEPARTMENT OF BIOTECHNOLOGY

M.Tech. in Bioprocess Engineering (BT1) and M.Tech. in Clinical Engineering (CL1)



Bioprocess Engineering (BT1)

The programme aims to develop manpower with specialized skills in the area of Biological Engineering

Learning outcomes:

- The students will be able to develop skills for applications in Biotechnology based industries.
- The students will be able to develop skills to train others in the area of Bioprocess Engineering.

Bioprocess Engineering is an interdisciplinary area involving principles of both life sciences and engineering. Advances in bioenergy, biofuel production, metabolic engineering for the production of pharmaceuticals and fine chemicals, commodity and specialty chemicals, recombinant protein production are all contingent on a trained workforce of engineers in the 'bio' industries. In addition to industries, development of skilled bioprocess engineers in higher education and research is also very much needed. These specific needs

of the Biotechnology and Biochemical industries are addressed through this rigorous programme in Bioprocess Engineering.
The programme is tailored to build strong fundamentals in chemical engineering principles applied to bioprocesses. Building on core concepts such as thermodynamics, reactor design, transport phenomena, and process control, the programme will help students acquire state-of-the-art knowledge in topics such as metabolic engineering, synthetic biology, modelling of biological systems, plant cell bioprocessing, biomaterials, computational and systems biology etc. The students will gain practical experience in genetic engineering, cell culture, upstream and downstream processing through two laboratory courses. The curriculum also includes a year-long project, which will hone the skills towards an industrial or academic career.

More information about the programme is available at the following website.
https://biotech.iitm.ac.in/academics/mtech-bioprocess-engineering/

M.Tech. in Clinical Engineering (CL1)

The use of advanced technology is an essential requirement of the modern medical practice. Thus, presence of well trained Clinical Engineers within the healthcare system is also needed to ensure effective and safe use of this technology. Clinical Engineers are an integral part of the clinical and management team, and work closely with the medical practitioners to achieve optimal use of technology in healthcare. Clinical Engineers, being directly exposed to clinical setup, can identify the unmet clinical need and apply their design and development skills to provide innovative solutions, which can fundamentally change medical practice in the future.

The Joint M. Tech. Clinical Engineering Programme is the FIRST Programme in the country to formally train Graduate Engineers as Clinical Engineers. It was launched in 2008 with the support of the Department of Science and Technology, Government of India.

Indian Institute of Technology Madras (IITM) (One of the country's premier institutes in technology education and research), Sree Chitra Thirunal Institute of Medical Sciences and Technology (SCTIMST), Trivandrum, (A leading national institute involved in technology development for medical devices and a tertiary care hospital) and Christian Medical College (CMC Vellore), (One of the finest medical colleges and research institutes, and a 2500 bedded multi-specialty hospital), jointly run the M.Tech. (Clinical Engineering) Programme.

It brings together three of the best institutions in the country that combine engineering, medicine and management. It has been designed to enable students to develop comprehensive knowledge in the field and acquire multiple skills to become highly proficient Clinical Engineers.

The M.Tech Programme will be of two years duration. The students will study and work at all the three participating institutes. Fellowship is awarded to all the selected students for the complete duration (2 years) of the Programme. An aptitude for engineering and an interest in working in a hospital environment is desirable.

Highlights of the Programme:

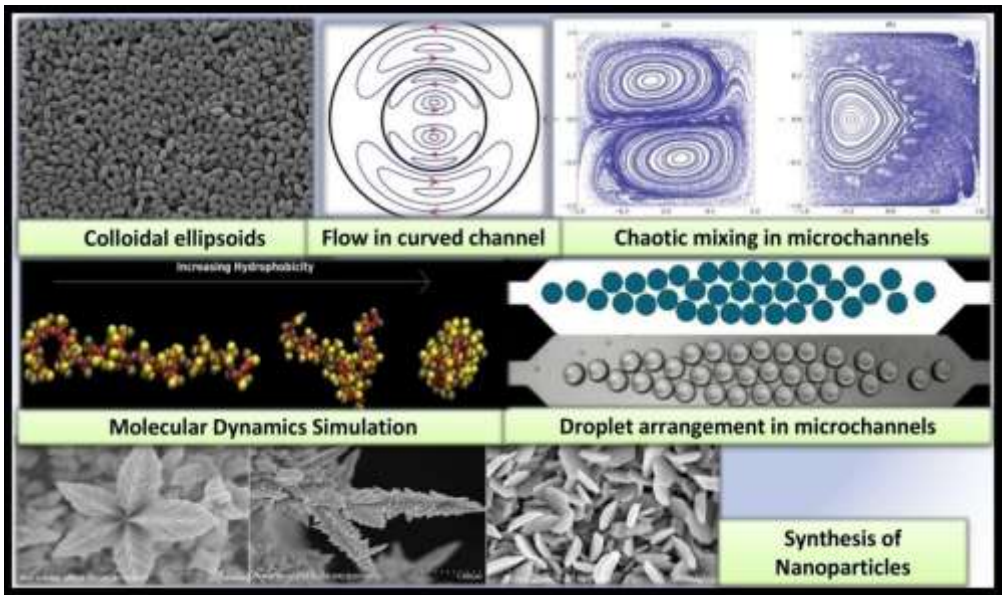
- A minimum residential requirement of one semester in each institution where engineering, medical and management courses are taught formally.
- Clinical Attachment (1 semester each in CMC and SCTIMST) gives a direct exposure to different departments of these hospitals to give an insight into the realities of a typical healthcare system.
- Master's degree project with joint guidance by mentors from any two or all three institutions (1 semester)
- One week training in peripheral rural hospitals around the country.
- Short training in a medical device medical instrumentation industry.
- Guest lectures and short courses by eminent professionals from leading hospitals and institutions of the country.
- Thorough exposure to medical device design and development processes.
- Upgrading to the Joint PhD programme in Biomedical Devices and Technology offered by the three institutions: MTech students who wish to embark early on a career in research are encouraged to upgrade to the PhD programme upon satisfying prescribed norms.
- Students have been placed in companies related to healthcare and biomedical devices and technology, including, Stryker, HCL, Medtronic, Cerner, etc.

For further details about the Clinical Engineering Programme, please visit https://biotech.iitm.ac.in/academics/clinical-engineering/

IV.DEPARTMENT OF CHEMICAL ENGINEERING

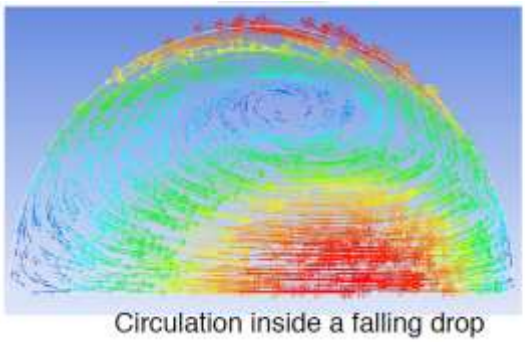
M.Tech. in Chemical Engineering (CH1)

Snapshots of Results from Current Research Activities

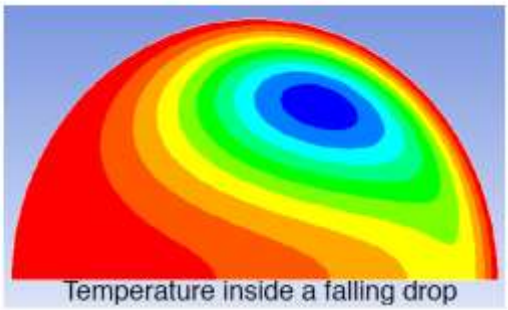


Vanadium Redox Flow battery setup

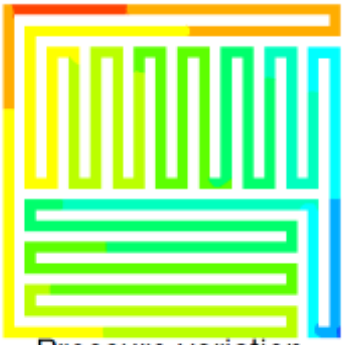
CFD Simulations



Circulation inside a falling drop



Temperature inside a falling drop



Pressure variation
in a battery

Typical pilot scale equipment:

Circulating fluidized bed

Inverse fluidized bed

1. Overview of the curriculum

The Department of Chemical Engineering's M.Tech. Program is specifically designed to provide specialized knowledge and enable students to meet the demands of industry and academia. The students go through an enriching curriculum that offers them a well-balanced mix of coursework and research based project. The program is spread over four semesters.

The main emphasis in the first two semesters is course work. The courses are classified as core/compulsory and electives. The *core courses* include *Chemical Reactor Theory, Transport Phenomena, Thermodynamics and Mathematical Methods in Chemical Engineering*. The students also do a dedicated Process Simulation laboratory course. The Department elective courses are decided by the student in consultation with his/her project supervisor. These are intended to equip the student with necessary background for carrying out the research project in the second half of the program.

2. Research Areas in the Department

The research project involves solving problems of fundamental significance as well as of industrial relevance. The research areas in the Department may be broadly summarized in Figure 1shown below.

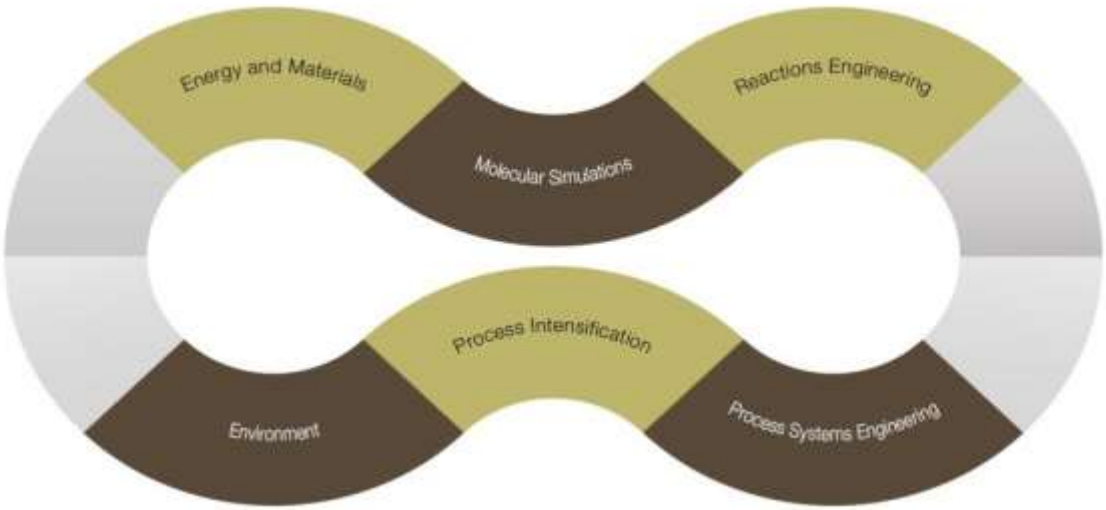


Figure 1. Research areas in the Chemical Engineering Department

a. Biochemical Engineering/Chemical Biology: Faculty are interested in understanding the protein aggregation mechanisms with regard to disease prevention, interaction between nanoparticles and biomolecules for the development of nano medicines and development of medical devices. For their research, they use a combination of tools ranging from molecular dynamics, Monte Carlo, kinetic Monte Carlo simulations as well as both steady and unsteady coarse grained computations.

b. Energy: Fundamental as well as application oriented research in the area of transport of heat, mass and momentum invariably need robust computational tools at various length and time scales. Faculty are working on conduction and convection heat transfer, microwave heating, droplet microfluidic systems, developing solvers for multiphase flow systems, mean field and mesoscale computations for reactor design and optimization, semi-theoretical tools for conventional and non-

conventional energy systems. In recent times research areas have opened up in thin film photo electrochemical solar cells, thin film solid state solar cells, solar fuels and gas hydrates.

c. Environmental engineering and waste reduction: The research work involves liquid and solid waste treatment, air pollution monitoring and control, toxic and hazardous waste management, removal of color and metal ions from waste water, recycling of mixed plastic waste, fate and transport of pollutants in environment etc.

d. Process intensification: This relates to development of technologies that are substantially smaller, cleaner, safer or more energy efficient. Faculty achieve process intensification either by improving the design or the operation of the equipment. Novel microfluidic systems, photocatalytic reactors and multiphase systems are being explored to enhance mass transfer and reaction rates. The focus has also been to use energy from ultrasound and microwave to intensify processes like solid dissolution, washing of coal and heating of food materials. Advanced combustion technologies like oxy-fuel/chemical looping combustion, biochemical processes that enhance enzyme/oil production and novel methods of synthesizing gold/silver nanoparticles are also being developed. Computational studies at the molecular and continuum scales are also carried out to simulate the enhancement of transport and reaction rates in the different processes.

e. Process and Systems Engineering: Using various optimization tools, data analysis**,** multivariate statistical analysis including time series analysis, a group of faculty are involved in investigating undertraining propagation in information theory, combinatorial chemistry, development of medical devices, particle synthesis and in designing and controlling water distribution networks. These are accompanied computations for model developments, process monitoring, fault diagnoses and network reconstruction. There is also current interest in working towards development of point of care devices, intensifying processes in microfluidic systems, developing computational tools for micro-fluidic systems with regard to lab on chip applications for various bio and pharma industries.

f. Reactions and Catalysis: To elucidate the reaction mechanisms and kinetic of reactions few of our faculty use computations tools such as quantum chemical ab-initio calculations, density functional theory (DFT) calculations, classical kinetic pathway modeling and stochastic population balances. Some applications include micro-kinetic modeling, complex transformations in oxidation and pyrolysis, gas hydration nucleation and growth, and nanoparticle formation in micro heterogeneous dispersed media. Coarse grained MD simulations and mesoscale simulations are used to fill the gap between the accessible scales in simulations and experiments. On a larger scale, computations using gradient based transport methods are used to learn about CO_2 capture processes and electrochemical storage.

g. Soft Matter and Phases: With an objective of understanding mesoscale systems and their behavior, our faculty uses a variety of techniques such as Monte-Carlo, Molecular Dynamics, Brownian Dynamics, Lattice Boltzmann and continuum field simulations. With a combination of these tools based on equilibrium and non-equilibrium approaches, they are involved in investigating the physical behavior of

charged and uncharged synthetic polymers in glassy, melt and solution phases. Current areas and applications include thermoplastics, polyelectrolytes and polymer-surfactant mixtures, protein aggregation and disease prevention, nanoparticle-biomolecular interactions in nanomedicine, pickering emulsions for enhanced oil recovery, active systems and interfacial flows, complex fluids and rheological behaviors, microfluidic systems, hybrid materials, colloidal solutions, soft materials and fluid phase equilibria.

The Department offers the students an opportunity to work on research projects of fundamental nature sponsored by DST, DAE, ISRO, IGCAR, etc. The Department also has attracted projects of industrial relevance sponsored by IOCL, HPCL, BPCL, HUL, JSW, ABB, BOC, BHEL, Carborundum, Saint-Gobain, MRL, Tata Honeywell Limited, NMRL, Aditya Birla Group, CUMI-Murugappa Group, Renault-Nissan Technology Centre and General Motors among others.

Upgrading to PhD programme: MTech students who wish to embark early on a career in research are encouraged upgrade to the PhD programme after two semesters, upon satisfying Institute prescribed norms. It is possible for the upgraded student to get both M. Tech. and Ph. D. degrees after doing two additional courses.

3. Internship and Placement:

MTech students are permitted to do a three-month industrial summer internship at the end of their second semester. This will give them the necessary industrial exposure and enhance their chances of placement.

Students have been placed in a wide range of companies that include

Atomic Energy Regulatory Board, Aura Aerosols, Behr process paints India Pvt. Ltd., Biocon Ltd., Bureau Veritas –Kuwait, Carborundum Universal Ltd., Hindalco Industries Limited, Hospira Healthcare India Pvt. Ltd., HPCL, IBM India Pvt Ltd, Jacobs Engineering India Pvt Ltd., Larsen & Toubro Ltd., Mitsubishi Heavy Industries, MRF, National Chemical Laboratory, National Fertilizers Limited, Non-Ferrous Materials Technology Development Center, Price Waterhouse, Sumitomo, Saint-Gobain Research India Ltd., Schneider –Electric, Siemens, Syngene International Ltd., Tata Consultancy Services, Tata Research Development and Design Center, Tata Steel Ltd, TVS Motor, Uop Honeywell, Vantage Research, Verity Knowledge Solutions Pvt Ltd., etc.
More information about the programme is available at the following website.
https://che.iitm.ac.in/

V. DEPARTMENT OF CIVIL ENGINEERING

M.Tech. in Civil Engineering

The following six Programmes are offered in M.Tech. Civil Engineering Discipline:

Building Technology and Construction Management (CE1)

This unique specialization offers courses covering a range of subjects in Building Sciences, Construction Materials, and Construction Engineering and Management areas, which include:
Building Science: Functional design of buildings, Buildings acoustics & noise control, Building services, and Energy management in buildings.
Construction Materials: Modern construction materials, Characterisation of Construction Materials, Advanced concrete technology, Maintenance & rehabilitation of constructed facilities, and Structural systems & design.
Construction Engineering and Management: Construction methods and equipment, Sustainable Construction, Construction planning and control, Construction project management, Construction economics and finance, Quality and safety management, Lean construction, Construction contracts & specifications, and Computer applications in construction.

Environmental Engineering (CE2)

This interdisciplinary Programme is designed to meet the needs of government departments/ public sector and industry, with emphasis on various aspects like protected water supply and sanitation for public health, pollution control, sustainable development, and fundamental science of various climate interaction and processes. The topics to be covered include protected water supply, waste water management, air pollution control, solid waste management, ground water pollution-fate, transport and remediation, environmental planning and impact assessment, modelling of air and water quality environmental chemistry, environmental microbiology biotechnology and environmental systems analysis, fundamentals of atmospheric and climate sciences.
The laboratory is equipped with sophisticated instrumentation facility with Gas chromatographs, High pressure Liquid Chromatograph, Ion chromatograph, Elemental analyzer, Total organic compound analyzer, FTIR and UV Spectrophotometers is one of the best facilities in the Country for environmental sample analyses. State-of-the-art and high end instruments for air pollution and climate research including aerosol research.

Geotechnical Engineering (CE3)

This Programme provides specialized knowledge in various geotechnical engineering topics such as foundation engineering, ground improvement techniques, design of retaining walls, underground excavations, etc. A wide range of subjects such as advanced soil mechanics, rock mechanics, soil exploration and testing, applied soil mechanics, advanced foundation engineering, soil dynamics and machine foundations, earthquake geotechnical engineering, geoenvironmental engineering, geosynthetics and reinforced soil structures, ground improvement, finite element analysis and constitutive modelling of soils, geotechnics for infrastructures, and seismic site characterization are included in the curriculum.

Hydraulic and Water Resources Engineering (CE4)

The major emphasis in Hydraulic and Water Resources Engineering is to provide specialized and practical knowledge in: soft computing in water resources, hydrologic modeling, stochastic and spatial hydrology, computational hydraulics, river flow, flood, dam-break flow, tsunami and storm surge propagation, coastal and estuarine flow, conjunctive use of surface and ground water, aquifer modeling and management, pollutant and sediment transport in rivers, water resources planning and management, irrigation water management, climate change, urban water supply and GIS/remote sensing applications.
The laboratory has several flumes for conducting various open-channel flow experiments. In addition, the laboratory is equipped with several table top models (hydraulic benches) to demonstrate basic hydraulic and hydrologic phenomenon such as laminar and turbulent flow, impact of jet, flow over weirs and notches, pumps, water distribution networks and basic rainfall-runoff processes. In addition, a number of high end PC’s are available to meet the requirements of the graduate students. Advanced technical, computational and mathematical software tools required for design and simulation of water and environmental systems are available for class projects and research use.

Structural Engineering (CE5)

This Programme deals with the following major areas: advanced structural mechanics, finite element analysis, structural dynamics, structural stability, structural reliability, structural optimization, reinforced and pre-stressed concrete, steel structures, design for wind and earthquake, plates and shells, bridges, tall buildings, towers, computer applications in structural engineering, fracture mechanics, masonry structures, power plant structures, composite structures.

Transportation Engineering (CE6)

The programme covers wide range of topics under Transportation Engineering which includes characterization of pavement materials, design, construction, maintenance and management; traffic engineering including Intelligent Transportation System, transportation planning, modeling and management. The programme shapes up the students with the needed expertise and proficiency for a professional career in the field of transportation engineering. The students are imparted hands on training on pavement material characterization using state-of-art equipment; pavement

evaluation studies; traffic engineering studies and analysis; development of models through latest software in design studio and by associating the students in several industry sponsored research projects. The students specialized in the area of Transportation engineering are very well placed in leading consultancy and research organizations/institutions in India and abroad.

More information about the programme is available at the following website.
http://www.civil.iitm.ac.in/new/?q=mtech

VI. DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

M.Tech. in Computer Science and Engineering (CS1)

The objective of this discipline is to educate students so as to: (a) meet the computing needs of the country, (b) pursue research in specialized areas, and (c) meet the growing needs of engineering colleges for trained faculty in Computer Science and Engineering. The Programme includes courses covering the core of Computer Science and Engineering discipline and several electives in the areas of Advanced Algorithms, Artificial Intelligence, Computational Brain Research, Computer Architecture, Computer Networks and Distributed Systems, Computer and Network Security, Computer Vision, Cryptography, Distributed and Cloud Computing, Deep Learning, Hardware Systems and VLSI, High Performance Computing, Human Computer Interaction, Image and Speech Processing, Machine Learning, Natural Language Processing, Programming Languages and Compilers, and Theoretical Computer Science. Students undergo rigorous training in the fundamental courses in the first semester, which includes an advanced programming lab. A substantial final-year project is also part of the curriculum.

More information about the programme is available at the following website.
http://www.cse.iitm.ac.in/

VII. DEPARTMENT OF ELECTRICAL ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

The department of Electrical Engineering is one of the largest departments in IIT

Madras which works in the frontier areas of communications, microgrids, integrated circuits and systems, microelectronics, electro-magnetics and photonics, and biomedical devices. It works closely with industry, research labs, defense labs, hospitals and government. It counts many IEEE Fellows, Bhatnagar awardees, Swarna Jayanti awardees and editors of prestigious professional journals among its faculty. MTech students have exciting internship opportunities with both industries and universities in India and abroad and are often encouraged to upgrade to PhD. Their placement record is one of the best in IITM. Many have pursued higher studies at IITM or in other reputed institutions globally.

The department offers a M.Tech degree in Electrical Engineering. Students are admitted into the following specializations:

1. EE1: **Communications and Signal Processing**
2. EE2: **Power Systems, Power Electronics and High Voltage**
3. EE3: **Microelectronics and VLSI Design**
4. EE4: **Control and Instrumentation**
5. EE5: **Microelectronics and Photonics**
6. EE6: **Integrated Circuits and Systems**

Detailed information about the Department's faculty, facilities, academic programs, publications, and related matters can be found on the website: **www.ee.iitm.ac.in**

Communications and Signal Processing (EE1)

Areas of research

Communications and Networks: Labs working in this group focus on current and cutting edge problems in wireless communications and networks. Their research focuses on mathematical modelling, analysis, designing of new algorithms and prototyping using test beds. Their interests span physical layer modulation and coding, scheduling and rate adaptation, estimation and detection, resource allocation and optimization, network control, information theory, 4G/5G technology and standards, LTE systems, MIMO systems, cognitive radios, mobile IP, optical backbone networks and software defined radios & networks.

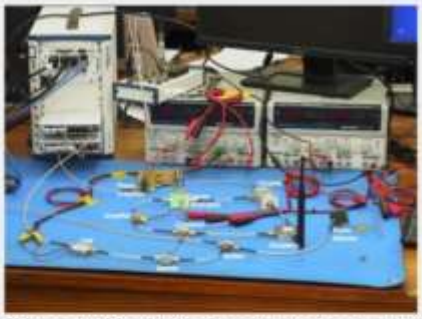
Image and speech signal processing: Labs working in image processing and computer vision focus on various aspects ranging from image deblurring and dehazing, underwater imaging, image and video matting, HDR to vision tasks like face recognition, 3D geometry inpainting and depth from motion blur. They also work on developing novel computational cameras and mathematical framework for their analysis as well as deep learning architectures for solving various image processing and computer vision problems. Speech group mainly works on the Automatic Speech Recognition (ASR) for indian language, deep learning methods for speech recognition and multilingual speech recognition.

About the programme

This Programme leads to specialization in modern communication system (with emphasis on broadband wireless communication), signal processing, optical and computer networks. Foundational graduate-level courses include probability and random processes, communication systems and digital signal processing. A number of advanced electives are available in the areas of digital communication, information theory, coding theory, wireless communications, speech & image signal processing, computational imaging, optical and data networks. Comprehensive laboratory training covers implementation on DSP processors & advanced wireline and wireless communications. The students opting for this Programme are expected to have good basic knowledge in the areas of analog & digital communications, signal processing. The mathematical backgrounds needed are (i) signals and systems (LTI systems and basic transform theory) and (ii) basic probability & random-processes.

Placements: Qualcomm, Intel, Samsung, Maxlinear, Sandisk, MediaTek, Redpine Signals, Analog Devices, TI, Cypress Semiconductor.

Research@ Communications and Networks



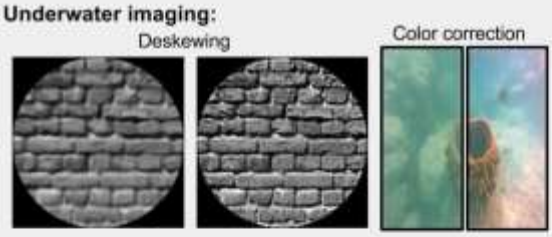
Software defined radio based experiment setup

A prototype for in band full duplex radios using off the shelf RF components

Research@ Image Processing and Computer Vision Lab

Image enhancement:

Underwater imaging:

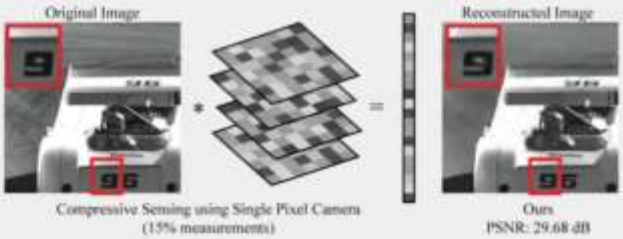


Motion Deblurring:

Deep learning: Motion segmentation

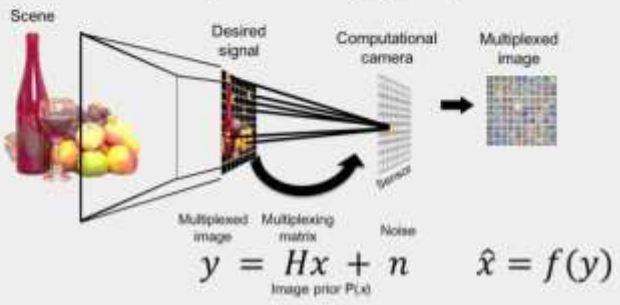
Research@ Computational Imaging Lab

Deep learning for ill-posed signal recovery:



Novel imaging systems:

Framework for computational imaging analysis:



Power Systems, Power Electronics and High Voltage (EE2)

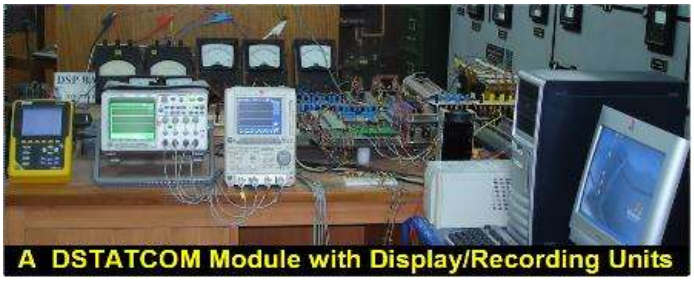
Areas of research

The group is actively involved in research related to power electronics based motor drives, grid integration of renewable energy sources with a focus on solar and wind, power quality issues and mitigation techniques, smart grids, power systems modelling and analysis, energy markets, nanotechnology, condition monitoring of power apparatus adopting multi fusion sensor techniques, sterilization of liquid foods and effluent treatment.

About the programme

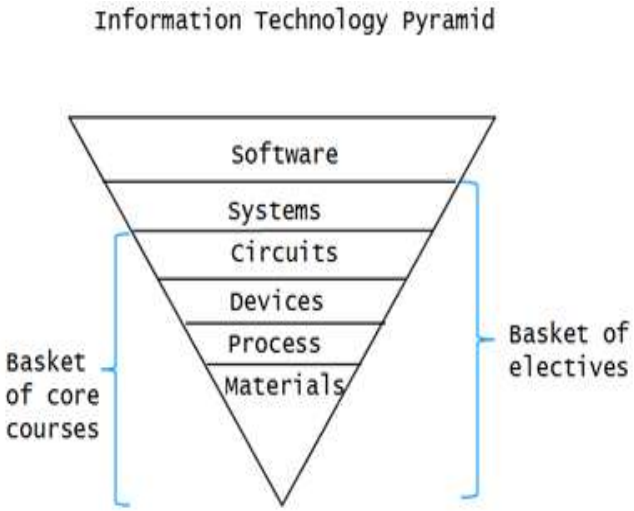
This programme leads to specialization in one or more of the following areas: Power electronics and machine drives, power systems and high voltage engineering. In the first semester students do courses in the areas of power electronics, power systems and machine drives. In the second semester, students can select a few elective courses from a large set which includes high voltage engineering for advanced knowledge in the area in the area of their interest.

There are four important labs related to the programme: High voltage, electric machine, power quality and automation labs. High voltage lab is a state of art lab for condition monitoring of power apparatus and have capability to test power apparatus especially the lightning impulse voltage for 220 kV BIL. Machines lab has labview assisted facility for doing experiments on electric machines as well as power electronic drives. In power quality lab prototype power quality improvement devices are available. Automation lab has a scaled down model of power systems with SCADA. Software packages like ETAP, Power World Simulator, PSCAD, PSPICE, FEM are also available in these labs. A student is encouraged try his or her hand in all these labs. Further the student will get an opportunity to work in these labs basing on his/her interest during the project.



Placement: Some of the companies in which our students have been placed are: ***GE, Tata Motors, Lucas TVS, ABB, Honeywell, Eaton, Hitachi India Ltd., Tata Power, Alstom, Power Grid, L & T and Intel.***

Microelectronics and VLSI Design (EE3)



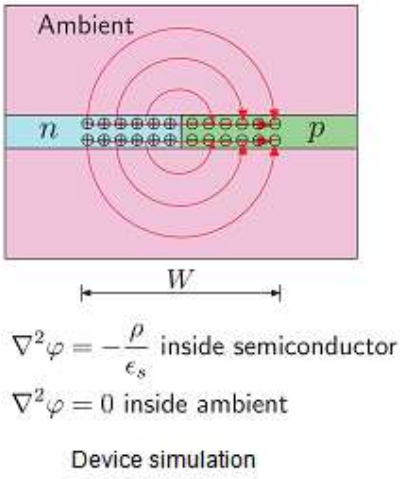
The goal of any technology is to create a useful product which is not readily available in nature by means of complex processing of material, information etc. Microelectronics is the science and technology of making very small electronic components and systems. In the last 60 years, microelectronic devices served as the foundation of the digital revolution which has affected all aspects of our modern life. The technology to fabricate

these devices require a close collaboration of specialists from different disciplines and can be considered as a modern day alchemy which converts sand to a useful product like a microchip.

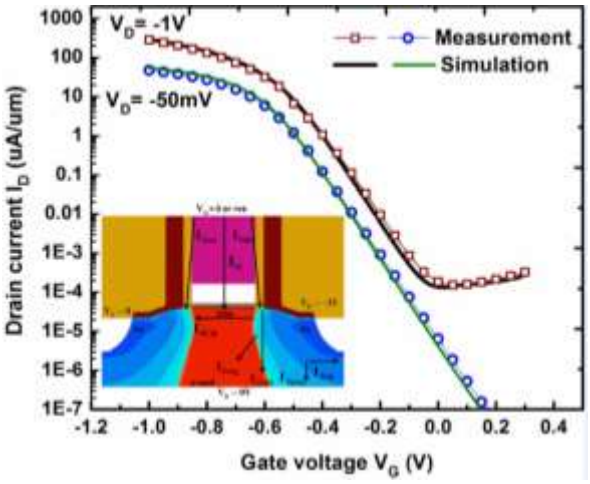
What we offer / What you learn

The M.Tech programme in Microelectronics and VLSI design is aimed at training students in design, simulation, modeling, fabrication and testing of very small electronic components and systems. Students are expected to undergo a broad set of core courses which cover the basics of all aspects of Microelectronics, VLSI design and MEMS and then given an opportunity to dive deep into any area by choosing suitable electives.

Students who join this program will have the opportunity to carry out their project work in labs that are equipped with the state-of-the-art design, simulation, fabrication and testing tools. For more details on lab facilities, please visit:



Device simulation



http://www.ee.iitm.ac.in/cnnp

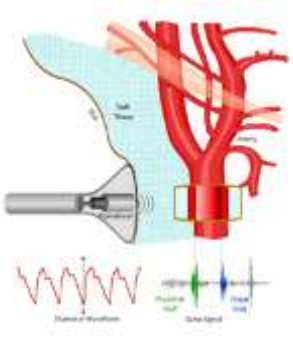
Placement: Some of the companies in which our students were placed are: Analog Devices, ARM, Cypress Semiconductor, Global Foundries, IBM, Intel, Texas Instruments, TSMC etc*.*

Control and Instrumentation (EE4)

What we do

Control and instrumentation lies at the heart of engineering. It is an important area of research for addressing the challenges and complexity of automation in industrial structures and manufacturing systems. Nowadays, diverse areas such as the energy systems, infrastructure management, transportation systems, and medicine are increasingly becoming reliant on progress in this discipline.

The research focus of the group spans a wide range. The recent efforts have been in modeling, design and control for intelligent robotics, biomedical instrumentation, healthcare, transportation and power networks, sensors for automotive and transport applications, and cyberphysical systems. Our research projects are funded by



established organisations which include ***DST, DRDO, Nissan corporation, Emerson, ITRA and IU-ATC.***

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What we offer

The M.Tech programme in Control and Instrumentation is aimed at training students in modelling, system analysis, controller design and instrumentation methods. The programme prepares engineers, with top-quality expertise and skills, for a key role in a wide range of high-tech engineering fields. The program has strong linkage with the Healthcare Technology Innovation Centre (www.htic.iitm.ac.in) operating out of IIT Madras Research Park. Students will have opportunities to work along with medical professionals and industry in developing technology solutions for unmet healthcare needs of India. For more details about the programme refer our website (www.ee.iitm.ac.in/~dynamic_control/).

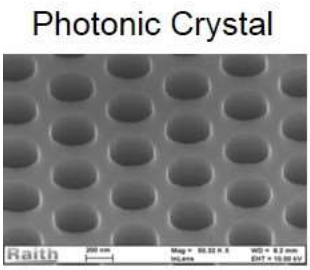
Where our graduates are placed

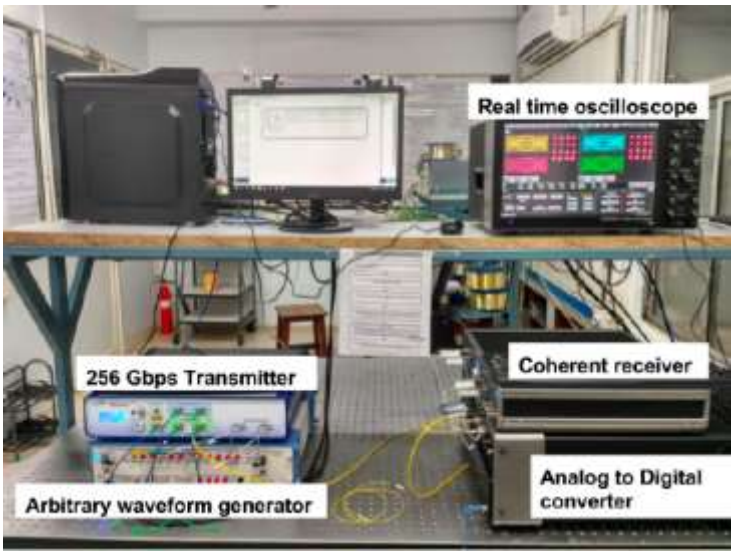
The graduates of our programme get placed in positions as design engineers and research staff members in leading public and private sector industries. These include ***General Electric, Eaton, Honeywell, Schneider Electric, TVS Motors, Mathworks, Goldman Sachs, Amazon, Cypress Semiconductor, MaxLinear, Citycorp and Tiger Analytics.***

Microelectronics and Photonics (EE5)

This M.Tech. program introduces basic knowledge of microelectronics and VLSI technologies along with in-depth know-hows of radio-frequency (RF) and light wave technologies for communications, signal processing and sensing applications.

In the optical or photonics realm, we deal with various aspects of light, such as its generation, transmission, modulation, processing, switching, amplification, detection and sensing. Research activities include design, analysis and synthesis at the device, component, system, and network level. The group designs, fabricates, and analyses various kind of optoelectronic, plasmonic, and all-optical devices. In addition to physical devices, service layer related research on Tbps optical networks and quantum encryption are also investigated in such networks.

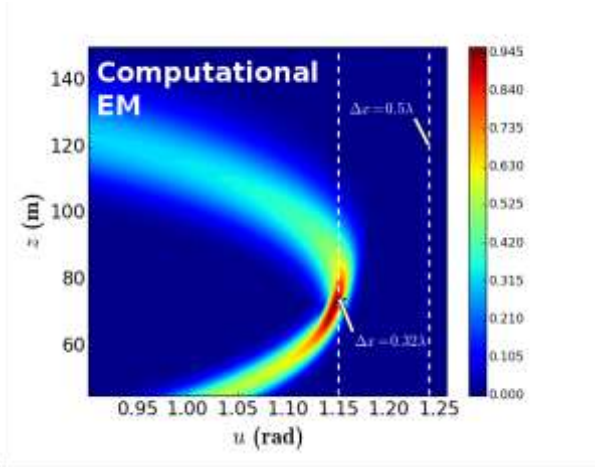




In the radio or microwave realm, we work on aspects of satellite remote sensing, inverse microwave imaging, computational electromagnetics, and millimeter wave communications for 5G networks.

Students who specialize in microelectronics and photonics typically get placed in top technical companies and government labs, while many choose to go on for doctoral studies. Some statistics can be seen in the infographic below.

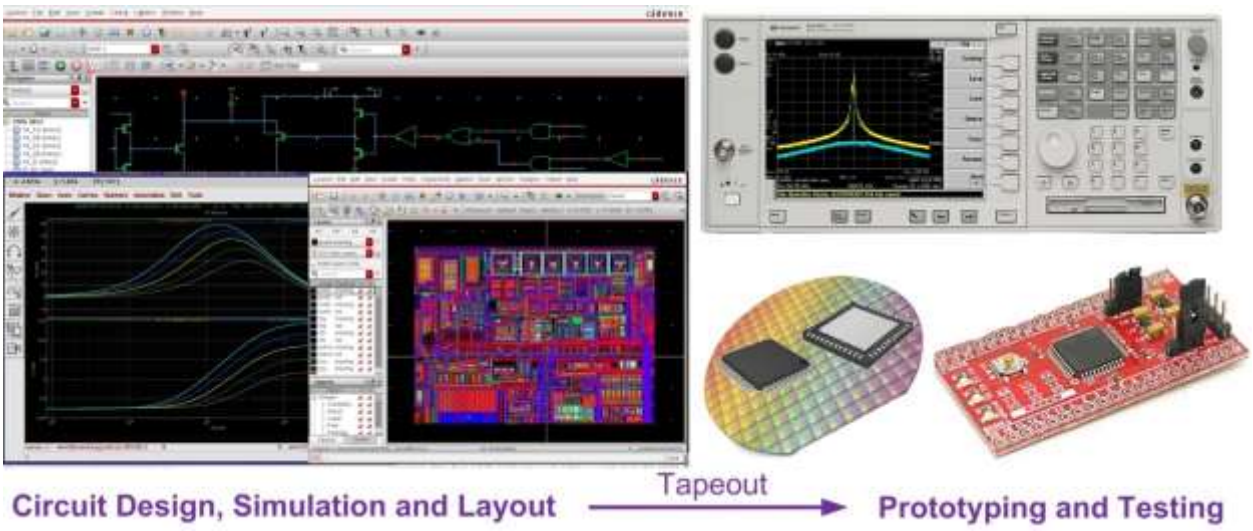
This is an interdisciplinary specialization, with the active support of faculty from Departments of Electrical Engineering, Physics, Applied Mechanics, and Engineering Design. The curriculum for the Photonics Programme can be found at



http://www.ee.iitm.ac.in/pgpgm-rf-and-photonics

Integrated Circuits and Systems-iCS (EE6)

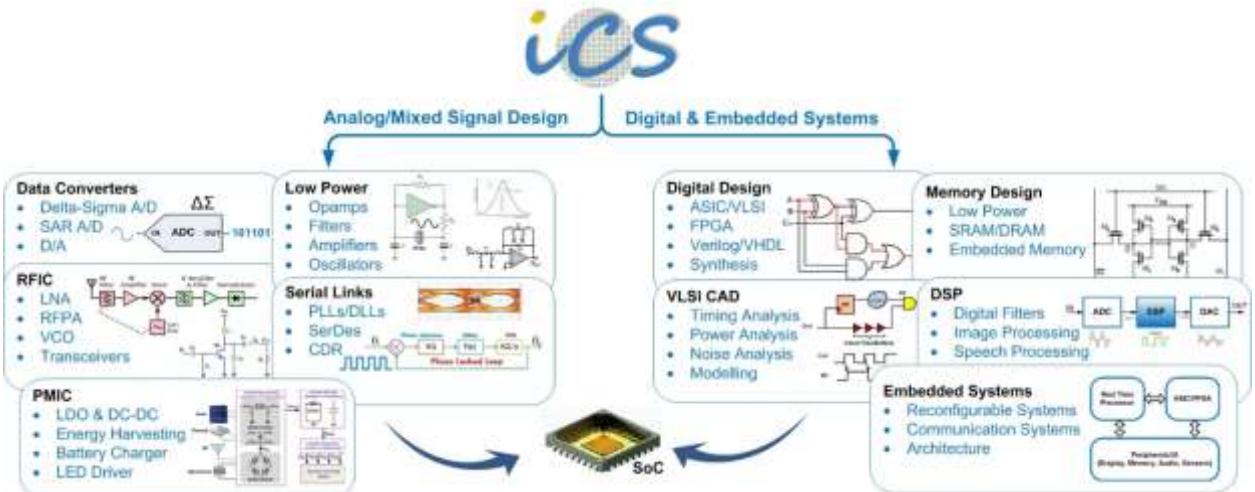
The Integrated Circuits and Systems (iCS) group at the department of EE, IIT Madras deals with various aspects of designing integrated circuits and embedded systems. The group has highly experienced faculty in the area of analog/mixed signal and digital ICs, VLSI CAD and embedded systems with track record of driving full chip products right from concept to design, tapeout, prototyping and testing.



Integrated Circuit Design Flow

Research Areas

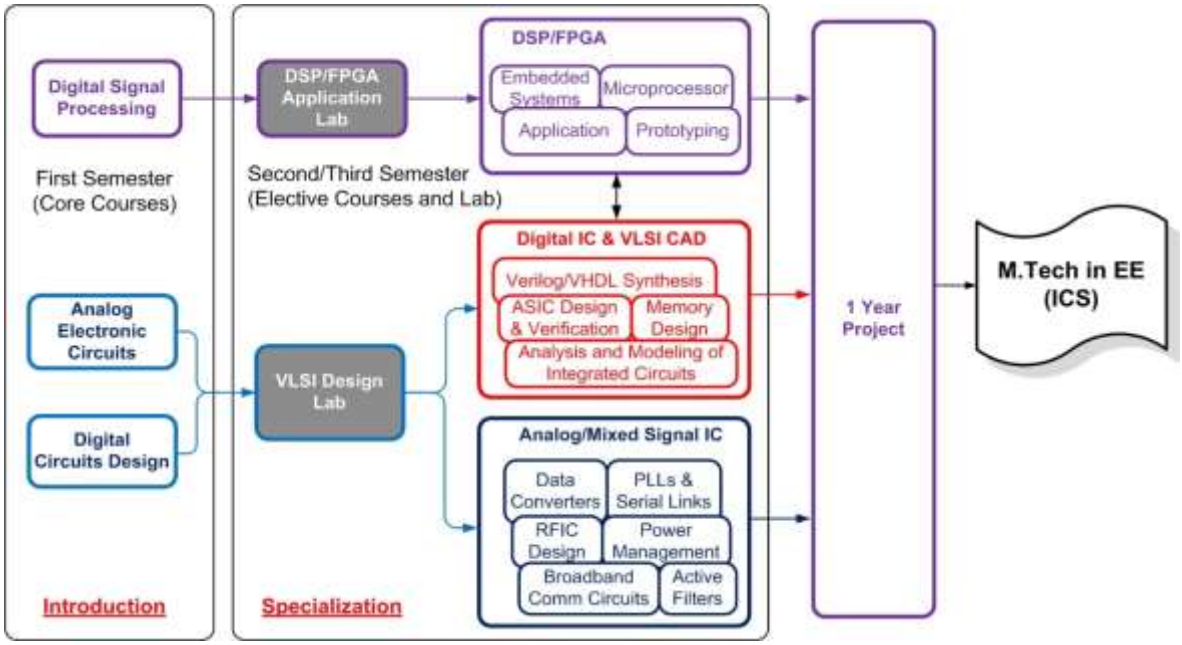
Research in the iCS group is focused on design of various analog/mixed signal, VLSI CAD, digital circuits and embedded systems which are essentially required to build a complete system-on-chip (SoC). Our research work is published in renowned journals/conferences and also protected through patents.



Research in iCS

MTech Program

MTech in EE with iCS stream is an industry oriented program specially designed for students who want to make their careers in the area of IC design/VLSI or embedded systems. The program is structured to enable the students learn basics of circuit design in the first semester and then take specialized courses and labs in the second semester. Students can choose the courses as per their area of interest which could be analog/mixed signal ICs, digital ICs, VLSI CAD or embedded systems. The



MTech in EE with iCS stream

program also provides hands-on experience through a 1 year project where students go through the complete flow of designing an integrated circuit or a system.

Placement

Needless to say, our students are in great demand in industry. Following are some of the leading companies where our students have been placed in recent times. Those interested in higher education have found PhD positions with reputed groups in India and abroad.

Further details about the iCS group and academic programs can be found at: http://www.ee.iitm.ac.in/ics

VIII. DEPARTMENT OF MATHEMATICS

M.Tech. in Industrial Mathematics and Scientific Computing (MA1)

The primary objective of this Programme is to train the manpower required to deal with the problems faced by industry through knowledge of mathematical modeling and scientific computational techniques so as to achieve reduced costs, flexibility and high quality.

The curriculum is interdisciplinary in nature and the course contents provide a broad understanding of the different aspects of applied mathematics and computer applications. The lecture-based courses cover a wide spectrum of topics including mathematical modeling, applied statistics and probability, operations research, numerical methods, discrete mathematics, data structures and simulation. The laboratory courses provide necessary training in advanced techniques of software and simulation. Students are also required to take suitable courses from engineering and science departments. Modeling workshops, spread over two semesters, are an integral part of the Programme, during which the students gain proficiency in the modeling of real world problems, experience in team work and effective technical communication.
An important component of the Programme is the project work that will be done by the student in collaboration with industry and engineering / science departments. The aim of the projects is to impart in-depth training in the analysis of problems relevant to industry.

More information about the programme is available at the following website.
https://math.iitm.ac.in/program/2

IX. DEPARTMENT OF MECHANICAL ENGINEERING

The following three Programmes are offered in M.Tech. Mechanical Engineering Discipline:

Thermal Engineering (ME1)

The Programme 'Thermal Engineering' offers courses related to theory and applications of thermal engineering. Core and Elective courses are offered by the Thermal Engineering faculty from the six laboratories comprising of (a) Thermodynamics and Combustion Engineering laboratory, (b) Heat Transfer and Thermal Power laboratory, (c) Hydro turbo machines laboratory, (d) Internal Combustion Engines and Gas Turbines laboratory, (e) Refrigeration and Air-conditioning laboratory, and (f) Thermal Turbo machines laboratory. All students have to take 9 stream courses in the first two semesters.

The courses are as follows:

Semester I - Advanced Heat and Mass Transfer, I.C. Engines Combustion and Pollution, Refrigeration and Cryogenics, Incompressible Fluid Flow, Principles of Turbo machinery and Applied Thermodynamics.

Semester II - Numerical Methods in Thermal Engineering, Measurements in Thermal Engineering, Advanced Energy Conversion, Thermal Engineering Laboratory.

The students also have an opportunity to study 4 elective courses from the department (out of a total of 66 possible electives) and 1 free elective from any department. The students will undertake a two semester project in their second year.

Core courses are designed to provide the students the required base for undertaking specialized electives and the project. The student will pursue a project of his/her choice in any area in which the thermal engineering faculty are engaged.

Mechanical Design (ME2)

Mechanical Design Programme offers courses related to the mechanical aspects of design and their application. All the students take five core (theory) courses and one laboratory in the first semester - computational methods in engineering, theory of vibrations and principles of product design, design with advanced materials and advanced mechanics of solids.

Additional core subjects such as failure analysis, finite element analysis and a laboratory course on CAE are offered in the second semester. The students are offered a basket of electives such as design synthesis, design of transmission elements, gear design, CAD/CAM for product design, mechatronics, product reliability, design of transmission systems, fracture mechanics, tribo-design, tribo-instrumentation, nonlinear solid mechanics, optimization methods, rotor dynamics, random vibration, acoustics and noise control, vehicular vibration, chaotic vibration, advanced theory of vibration, modal analysis of mechanical systems, advanced nondestructive evaluation, elastic waves and ultrasonics, structural health and integrity monitoring, design for manufacture and assembly, theory of mixtures, mechanics of human movement.

The concepts learned through course work are useful for the project work done in the third and final semesters. The project work can be taken up in the following broad areas of expertise: Finite Element Analysis; CAE; Vibration; Acoustics and Noise Control; Fluid-structure interactions; Constitutive Material Modeling; Fatigue and Fracture; Machine Elements; Mechanisms; Kinematics; Non-Destructive Evaluation; Structural Health and Condition Monitoring; Tribology; Robotic and Automated Inspection, Fretting; Rotor Dynamics; Product Design; Bio-Mechanics, Human Body Kinematics, Prosthetics; Design Optimization and Reliability Engineering as well as in new and Emerging areas of mechanical engineering relating to design.

Manufacturing Engineering (ME3)

The courses offered in the first and second semesters are computational methods in engineering, microprocessors in automation, metrology and computer aided inspection, computer-aided design in manufacturing, computer numerical control, advanced materials and processing, sensors for intelligent manufacturing & condition monitoring and mechatronics and oil hydraulics & pneumatic systems, Manufacturing and Precision Engineering Laboratories.

A good number of electives permit one to choose his/her area of interest within the broad spectrum of courses related to advanced manufacturing engineering, computer integrated manufacturing and precision engineering.

The list of electives include the courses such as production system design and control, robotics and robot applications, handling system design, tooling for automated manufacturing & assembly, and management of finance, marketing & personnel, with a special emphasis on impact of computers in advanced manufacturing. Further, a wide variety of electives for in-depth study in specific areas of CIM such as artificial intelligence in manufacturing, flexible manufacturing systems, machine vision & its applications are included. This also includes courses to give a clear understanding of the organizational aspects and total quality management of CIM environment. A number of electives are offered to cover precision engineering elements and instruments, manufacturing methods in precision engineering, precision drives & controls, applied optics, instrumentation and controls, and other important aspects of precision engineering which have assumed a great significance in the recent past for realizing a host of products ranging from IT to Aerospace.

The project work can be taken up in the areas such as computer applications in design and manufacturing, materials, heat treatment and manufacturing processes, process equipment and tools, process control and optimization, inspection, testing and quality assurance, manufacturing automation; sensors and handling devices. their selection, integration and control, simulation and management aspects. Project work can also be undertaken in the broad areas of instrumentation, robotics, precision manufacture, metrology, microprocessor system based development. CAD, adaptive and digital control system, active noise control, active suspension, embedded controllers for automotive application, sensor technology, micro actuators, dynamic balancing, magnetic suspension, gyroscopic systems, hydraulic and pneumatic systems, simulation and dynamic analysis, sintered bearings, mechatronic devices, computer aided surgery and Micro Electro Mechanical Systems (MEMS).

More information about the programme is available at the following website.
https://mech.iitm.ac.in/meiitm/curriculum-2/b-tech-dual-degree/

X. DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

M.Tech. in Metallurgical and Materials Engineering (MM1)

This Programme is designed to strengthen understanding of the students in the core areas of metallurgical and materials engineering, and to meet the needs of Indian industry as well as R&D organizations. A blend of theoretical knowledge and modern laboratory and industrial practices is imparted to students through a few core courses and a set of elective courses. These courses span the areas of materials technology and manufacturing processes such as metal forming and materials joining. In addition, courses pertaining to areas such as characterization techniques improve the ability of the student to adapt to emerging areas of research. There are certain core courses such as mechanical behaviour of materials, materials characterization, thermodynamics & kinetics, Advanced phase transformations and numerical methods for metallurgists to be taken up by all M.Tech. students. A set of elective courses apart from the core courses will give a firm foundation to the students in an area of their choice.

Thermo-Mechanical Simulator (Gleeble 3800)

The department offers materials technology related elective courses in various areas as follows.
Courses on composite materials, advanced engineering materials, advanced powder processing, chemical physics of modern technical ceramics, polymers and colloids: physics and applications, electronic materials – devices and fabrication, topics in nanomaterials, medical materials, smart materials, materials in renewable technologies will provide an understanding of emerging materials to the students.

Courses on deformation and failure of materials at elevated temperatures, brittle fracture and indentation mechanics, fatigue of materials, corrosion engineering, surface degradation processes, surface engineering, stability of microstructures, textures in materials, defects in materials, structure and properties of grain boundaries and interfaces, role of microstructure in materials selection and design provide an in-depth exposure to the behavior of materials.

Courses on atomistic modeling of materials, computational materials thermodynamics, modeling of transport phenomena in multi-phase systems introduce the students to the computational aspects of materials engineering.

Courses on process metallurgy of steel making, iron and steel making technology, physical metallurgy of ferrous alloys, special topics in iron and steel technologies add to the strength in steel and related materials.

The courses in the area of forming include metal forming processes, plasticity and plastic deformation and sheet metal forming. The courses in the area of joining include welding processes, welding metallurgy and additive manufacturing. These courses expose the students to emerging topics in manufacturing.

In addition, courses, such as X-ray diffraction techniques, electron diffraction and microscopy, advanced transmission electron microscopy and non-destructive evaluation will prepare students to understand and use various characterization tools.

Apart from the departmental core and elective courses, some of the courses offered by other departments/specializations may also to be taken. Project work constitutes a significant part of the M.Tech. programme.

More information about the programme is available at the following website.
https://mme.iitm.ac.in

XI. DEPARTMENT OF OCEAN ENGINEERING

M.Tech. in Ocean Engineering (OE1)

The M.Tech. Programme in Ocean Engineering relates to all forms of engineering activity in the oceans and includes deep-ocean, offshore and coastal waters. It is an interdisciplinary field which provides background to the students in a wide variety of areas such as offshore hydrodynamics, structural and foundation engineering, design and analysis of marine vehicles and floating systems, coastal engineering, design and analysis of offshore structures, ocean energy, instrumentation, experimental methods, and ocean engineering materials. A large number of electives provide opportunity to specialize in one or more areas of ocean engineering and equip students with skills in design, experiments and numerical modeling. This program prepares students to take up careers in offshore engineering pertaining to oil and gas, marine transportation, ports, coastal engineering etc.

M.Tech. in Ocean Technology (OE2)

M.Tech. in Ocean Technology is a full-time four semester program sponsored by the Earth System Science Organization - Ministry of Earth Sciences (ESSO-MoES), to meet the needs of trained manpower in various ocean technology related projects in India. Students opting for this program should have background either in engineering or in science and they should be interested in a career in technology, engineering systems which include marine transport, environment, ocean mining, underwater systems, ports and harbours, maritime security and marine scientific research. Ocean Engineering activities require a multi-disciplinary approach involving technical aspects of complex marine systems in coastal as well as deep ocean waters. The curriculum is specially tailored to encompass these aspects. Another important component of this program is shipboard training designed to give the students a feel for the sea and an opportunity to conduct scientific research in sea.

Eligibility: Candidates should have first class or 60% (55% in case of SC/ST) in

Bachelor's degree in any branch of Engineering or Technology or Master's degree in Oceanography, Marine Sciences, Ocean Science and Technology, Applied Mathematics, Applied Geology, Geophysics, and Physics or any other equivalent degree approved by the Advisory Committee with minimum 2 years' experience in ESSO-NIOT or in an organization approved by ESSO-NIOT. Fresh candidates with GATE score may also apply for a few seats approved by ESSO-NIOT.

More information about the programme is available at the following website.
http://www.doe.iitm.ac.in/courses/

XII. DEPARTMENT OF PHYSICS

M.Tech. Functional Materials and Nanotechnology (PH1)

Today's nanotechnology makes use of functional materials for various cutting edge technologies. Solid state materials with functional properties play a key role in applications spanning from space, defence, automotive, electronic, spintronics, MEMS, sensors, and medical technology. The fundamental understanding of functional materials is imperative in order to envisage applicability of these materials.

The department of Physics offers an M.Tech. program in "Functional Materials and Nanotechnology". This full-time four-semester program exposes the students to the science and technological aspects of the most advanced material systems. The students will gain thorough knowledge on the basic aspects of materials, design of materials with properties suitable for device applications. In addition, the program provides a complete perspective of the physics of nanomaterial and material technology aspects at the Nano scale leading to new avenues in Nano science and nanotechnology.

The lecture based courses cover a wide spectrum of topics. The main focus is to provide a broad understanding of the various aspects of functional materials and nanotechnology. The topics include synthesis and characterization of advanced functional and nanomaterial, semiconductors and devices, magnetic and spintronic materials, optical and optoelectronic materials, superconductors, sensors and actuators. In addition, courses on vacuum science and thin films and advanced condensed matter physics, will provide a strong platform for those who might be interested in research programs.

The laboratory courses provide necessary training on material preparation and advanced characterization techniques for nanotechnology. The students will be

exposed to the state-of-the-art facilities such as High Resolution Electron Microscopy, Scanning Probe Microscopy (SPM), SQUID Magnetometer, Spectroscopy Techniques, Thin Film Deposition Techniques, etc.

An important component of the program is the project work that spreads over the last two semesters. The project work enables the students to equip themselves for a research career and also imparts necessary training and experimental expertise relevant to industry. Internship at industry/research laboratories during the first year summer will add to this rich experience.
More information about the programme is available at the following website.
https://physics.iitm.ac.in/program/2

XIII. M.Tech. PROGRAMMES (INTERDISCIPLINARY)

M.Tech. in Catalysis Technology (CA1)

This Programme will be coordinated by the Department of Chemical Engineering in association with the National Centre for Catalysis Research (NCCR). NCCR is a national centre established by the Department of Science and Technology, Government of India to promote human resource development in this vital area and also to be useful to the Indian industry.

Considering the needs of Indian Chemical industry, this Programme has been developed strictly adhering to the academic standards stipulated by our institute. Elective courses cover topics such as catalysis in green chemistry and environment, photo-catalysis, catalysis in petroleum technology, catalysis in the production of chemicals, nano-materials in catalysis, bio-catalysis and computational methods in catalysis. All these electives have been designed to reflect the frontiers of research and development that are going on in these areas. In addition the candidates have been given the option to choose the electives offered by the Chemical Engineering Department and also by the Department of Chemistry on surface chemistry and chemical and electro chemical energy systems. The blend of science and technology in this course has come out naturally and hence the course can be interesting to students of both streams.

More information about the programme is available at the following website.
https://che.iitm.ac.in/?page_id=308

M.Tech. in Clinical Engineering (CL1)
See pages 27 and 28

More information about the programme is available at the following website.
https://biotech.iitm.ac.in/academics/clinical-engineering/

M.Tech. in Petroleum Engineering (PE1)

The M.Tech. Programme in Petroleum Engineering is an interdisciplinary Programme designed to meet the need of highly qualified manpower in the petroleum industry.

The curriculum covers the entire gamut of engineering activities in the petroleum industry, from petroleum prospecting, exploration and production to petroleum refining. Both onshore and offshore petroleum reserves and their exploitation are emphasized. The Programme will provide the students with a broad knowledge of the principles and practical aspects of petroleum engineering through key courses on petroleum geology, reservoir engineering, petroleum prospecting technologies, drilling technology, oil and gas production systems, risk analysis and safety issues, subsea engineering for oil and gas fields, petroleum refining methods etc. The students will also undergo summer training in ONGC facilities. The design and thesis projects will equip students to take up careers in challenging problems in both onshore and offshore oil and gas industry.

More information about the programme is available at the following website.
http://www.doe.iitm.ac.in/courses/

4. USER ORIENTED PROGRAMMES (UOP)

User Oriented Programmes are designed to meet the specific requirements of the user industries.

(i) M.Tech. in Construction Technology and Management (CE7)

This user-oriented Programme is tailored to meet the requirements of the construction Industry and is open only to sponsored candidates from organizations involved in construction operations - both government and private. The Programme is designed for training construction engineers and managers with undergraduate degree s in Architecture, Civil, Mechanical and Electrical Engineering. The contents of the core courses incorporate topics in the areas of construction engineering and management.

Based on the background of the students, elective courses may be taken from courses offered by several Departments including: Civil Engineering, Electrical Engineering, Humanities & Social Sciences, Management Studies, Mechanical Engineering, Metallurgical and Materials Engineering and Ocean Engineering. Two semesters are devoted to project work, which can be done at the institute and/or at the sponsoring agency.

(ii) M.Tech. in Ocean Technology (OE2)

This Programme is sponsored by NIOT (vide page 53 for details)

(iii) M.Tech. in Offshore Structural Engineering (OE3)

This Programme is for Larsen & Toubro. Details of curriculum for this Programme are available at http://www.oec.iitm.ac.in/Curriculum_M.tech_Offshore.pdf

(iv) Post Graduate Diploma in Metro Rail Technology and Management

Details of curriculum for this one year Programme are available at
http://www.civil.iitm.ac.in/PG Diploma Curriculum.pdf

(v) Web Enabled M.Tech Programs for Industries

Following web enabled programs jointly worked out with industries by the concerned departments are being offered.
(a) Mechanical Engineering: Master's in Automotive Technology
(b) Electrical Engineering: Master's in Communications Systems Engineering
(c) Electrical Engineering: Master's in VLSI

Details on web enabled programs are available at
http://cce.iitm.ac.in/course.html

5. STUDENT AMENITIES

5.1 Central Academic Facilities

5.1.1 Central Library

The central Library, a five-storey, air-conditioned building, houses a large number of books and has subscriptions to most of the renowned journals of engineering, science and technology including e-subscriptions. It is divided into different sections: Text Book/Reference, General Stacks, Reading Halls, Journal and Current Periodicals, Media Research Centre (which regularly screens educational and scientific videos), and a Book Bank.

5.1.2 Laboratories

In order to fulfill the teaching and research pursuits, IIT Madras has laboratory facilities ranging from the very basic to highly sophisticated ones. The Institute houses many labs with cutting-edge resources built in collaboration with industry partners. The central lab facilities include Sophisticated Analytical Instrument Facility (SAIF), Material Science Research Centre (MSRC) and Central Electronic Centre (CEC). A complete list of all the labs under each department is available at: http://www.iitm.ac.in/departments.

5.1.3 Computer Centre

The computer Centre houses one of the supercomputing facilities of the country with high performance computing environment (HPCE), high speed Networks catering the needs of approximately 18,000 nodes spread over the campus, Data Centre , E-services and workflow.

5.1.4 Central Workshop

The workshop is an educational platform where science and technology intersect. The central Workshop is one of the support services of the Institute that enhances the academic process of B. Tech., M. Tech. students and Ph. D. Research Scholars. Experiment set ups are routinely fabricated in this facility with utmost quality within the stipulated time to support research projects and teaching lab requirements of the Institute.

5.2 Residential Facilities

5.2.1 Hostels

IIT Madras is a residential Institute and provides on-campus accommodation to all students, faculty and staff. For students, there are 20 hostels out of which three are girls hostels. All Hostels are named after the prominent rivers of India. In view of unique and ecologically diverse nature of IITM, the students are not allowed to drive

powered vehicles in the campus. They can use bicycle or walk. The Institute operates buses and vans from the main gate to different parts of the campus and also around the Hostel and Institute Zone at frequent intervals for easy travel. Most hostels have capacity of 350 to 400 rooms. Internet and Local Area Network (LAN) facility is provided in every room and there is a computer room in all hostels as well. Students are also given an email account on the Institute Server.

Accommodation in the hostels is provided by the Chairman, Council of Wardens (CCW). The hostel rooms are furnished with a cot, a chair, and a writing table. Students are expected to bring their own bedding. Establishment fees cover the rent for the hostel accommodation (vide Section 2.11 for fees and deposits). Each hostel has a small library for exclusive use of the students of that hostel. Students can borrow novels and other reading material from the hostel library. Most hostels have also a garden. Every hostel has facility for sports such as table tennis, volley ball, ball-badminton courts. Every hostel has a music room and a tech room. Washing machines are provided in all the hostels. Students can also avail the laundry facility in the campus. There is a room with television known as the "common room" where most of the hostel gathering takes place.

Each hostel has a warden, who is a faculty member, and a resident Assistant Warden. They, with the help of the office staff, handle all administrative work concerning the hostel. The hostel council consists of the warden and a number student secretaries, elected by the residents of the hostel, decides issues pertaining the hostel.

5.2.2 Open Air Theatre (OAT)

In between the Gajendra Circle (GC) and the hostel zone, you will spot a large arena called the OAT (Open Air Theatre), where the weekend movies are screened by the Film Club. The best of the latest movies in English, Hindi and regional languages are screened. Movies in other languages are also screened by cultural associations. OAT is the venue where the 'Saarang' (the Institute's cultural festival) pro-shows are held. The capacity of OAT is about 7000 and it looks splendid when it gets lit up during shows of Saarang.

5.2.3 Shopping

The students Facilities Centre (SFC) located in the hostel zone caters the general needs of the students and is a popular location. It houses Patisserie cum coffee shop, general store, gift shop, juice shop, saloon, travel agency, printing and photocopying. The shopping centre in the residential zone hosts grocery shops, vegetable/fruit shops, a general purpose mega store, a tailor, a dry-cleaner and a beauty parlour.

5.2.4 Food

Institute has two large dining facilities namely Himalaya and Vindhya. Students of Sarayu, Sharavati, and Sabarmati hostels dine at the Vindhaya dining facility while the other students dine at Himalaya facility. The Institute provides its catering facility in two other places in Krishna and Cauvery hostels. A multitude of caterers operate the Himalaya dining facility, with a choice of North Indian and South Indian vegetarian and non-vegetarian cuisines. A two-story sprawling food court will be available shortly in the Academic Zone.

5.2.5 Bank Facilities

State Bank of India has a branch near the Gajendra Circle. A branch of Canara Bank is also available in the residential zone Shopping Centre. The SBI has two ATMs - one at the Branch and the other at the Taramani Guest House. Canara Bank has also two ATMs - one at its branch and the other opposite to Narmada Hostel. The SBI ATMs can be used to make all payments to the Institute. There is also an ICICI ATM in the office of Hostel Management (CCW office).

5.3 Student Life at Institute

5.3.1 Institute Hospital

Institute hospital has the facilities to take care of general health problems faced by students. It runs its services round the clock. Apart from the regular doctors, there are a set of visiting specialist including a general surgeon, ENT surgeon, opthalmologist, orthopedist, cardiologist, and psychiatrist. Well-equipped laboratories for almost all tests, X-Rays, and an in-patient ward are also available For details, visit: https://hospital.iitm.ac.in/

5.3.2 Guidance and Counseling

'*Mitr*' is a body comprising faculty and senior students with an objective to provide guidance to the students on academic and extra-curricular activities in campus, to expose them to various life skills and to counsel students to cope with emotional disturbances they face - curriculum related or otherwise. You can reach *Mitr* at any time for any kind of difficulties and it will solve them just the way your friend would.

To help students who require counseling, expert/professional counselors are engaged by the Institute and are available in a counseling room located at the Central Library. They are also available 24x7 through telephone. Apart from this, the Institute Hospital has 2 specialists Psychiatrists who take care of students who seek their help or who are referred to by *Mitr* or faculty advisors.

5.3.3 Weaker Section

Special help is provided for SC/ST students. The advisor for weaker section provides nurturing wherever required and tutoring by seniors. Students are benefitted significantly through the help provided at different stages.

5.3.4 Students with Physical Disability

All the building are installed with elevators and ramps to facilitate access to the students with physical disability, and are assigned specially designed hostel rooms with attached bathroom in the ground floor. An exclusive advisor is assigned to take care of academic and general well-being of these students. Dean (Academic Courses), Advisor (PD) and Dean (Students) meet with each of these students periodically to understand the special attention /requirements on a case to case basis. Additional requirements like large font question paper, extra time during examinations, suitable requirement/assistance in conduct of laboratory experiments and flexible curriculum requirements are also provided.

5.3.4 Students' Welfare Fund

Students' Welfare Fund provides financial assistance to the needy students such as aid for physically handicapped, accident or sudden illness related expenses that are not otherwise met by regular medical insurance, and loan to individual students to meet expenses related to travel and other expenses when they go on to 'study abroad schemes'.

5.3.5 Student's Distress Fund supported by Alumni

IITM Alumni have created a corpus to provide help to deserving students who are identified under financial distress due to any reason such as loss of bread-winner in the family.

5.3.6 Medical Insurance Coverage for all Students

All students are covered under a medical Insurance Scheme exclusively designed for students. Annual premium is paid by each student. All minor ailments are attended to by the Institute Hospital.

5.3.7 Travel Money by Alumni

The IITM Alumni funded IITMAANA Travel Grant programme is designed to assist IITM students, faculty and staff to visit USA and other countries abroad and present their papers at internationally recognized technical conferences. Participation in summits, workshops, competitions and semester exchange programmes may also be funded through this programme. One of the main objectives of IITMAANA is to promote Research and Development in Technical Education by providing an opportunity to deserving students to interact with peers and experts at International level. For more details: https://alumni.iitm.ac.in

5.3.8 Prizes and Recognition

No competent and deserving candidate goes unrecognized at IIT Madras. They win prizes for achievements ranging from commendable academic performance to those excelling in extra-curricular activities.

5.3.9 Training and Placement

The Placement Office is involved in securing placements for students graduating from the Institute. The office maintains a close liason with various industrial establishments (both private and public sectors), which conduct campus interviews and select UG and PG students from all disciplines. The placement cell provides the infrastructural facilities to conduct group discussions, placement tests and interviews.

5.3.10 Industry and Alumni Relations

IITM is actively involved with national and international organizations through the Centre for Industrial Consultancy and Sponsored research (IC & SR). Set up in 1973, the IC & SR plays a vital role in bringing together industry professionals and the faculty of the Institute for gaining insight and solving challenging problems. These joint efforts result in significant contributions to technology development. Students are actively involved in all these efforts. For more information, please visit: https://icandsr.iitm.ac.in/

5.3.11 Recreational/Extra Curricular Activities

IITM has a vibrant campus with lots of opportunities for students to get involved in co-curricular and extra-curricular activities. With the establishment of Centre for Innovation (CFI), and Students Activities Centre (SAC), there are as many as 25 different co-curricular and cultural clubs with about 2000 students registered with them. These pave way for the students to develop their talents, passion and skills and to showcase their abilities.

Many competitions and festivals are held. The prominent ones are the technical festival, named 'Shaastra' and the cultural festival, named 'Saarang'. There are many smaller scale versions of fests conducted by clubs on campus. Apart from these, some departments also conduct special fests at different times in the year. Some of the prominent ones are CEA Fest, Exebit, Biofest, Amalgam, Forays, Wavez, Mechanica, Samanvay and Chemclave.

5.3.12 Student Clubs

A large number of student-managed clubs are active in the Institute: Astronomy Club, Data Analytics Club, Linux Users Club, Design Club, Music Club, Institute Adventure Club, Quiz Club, Word Games Club, IIT for villages, Prakriti (group of environmentally conscious people), Oratory Club, Colloquium, Reflections (Perception, Introspection and Retrospection), EMLs (Extra Mural Lectures, inspirational lectures).

5.3.13 Sports Activities and Facilities

A sport at IIT Madras generates a lot of enthusiasm, not only within campus, but also from other colleges in the city and the country as well. The academic calendar is packed with sporting events, intra-hostel and inter-hostel events, inter-collegiate and inter-IIT tournaments. All hostels actively compete to win the coveted Schroeter Cup which is the inter-hostel sports championship.

The Institute has excellent sporting facilities in the campus which include: IIT Champlast Cricket Field, Athletics stadium, four synthetic floored Tennis & Wood-Floored Badminton Courts, three flood-lit synthetic floored basketball and three volleyball courts, swimming pool of Olympic standards, Hockey & Football fields with flood-lights, well-equipped Gymnasium, and newly constructed word class Squash courts.

6. RESEARCH FACILITIES

Ample opportunities exist for research-minded students to hone their research skills and participate actively in pioneering research studies. The faculty of departments of Engineering, Sciences, Management and Humanities & Social Sciences, along with their students, are involved in academic research, which often results in highly acclaimed publications in International and National Journals. Some of the research work is also presented in International and National conferences. A large number of sponsored research projects are funded by agencies such as the Department of Science and Technology, Aeronautical Research and Development Board, Indian Space Research Organisation, for tackling the challenging research issues of national interest. Several application-oriented industrial consultancy projects and collaborative research projects with foreign universities are also undertaken by our faculty.

Opportunities are available for interested students to participate in such sponsored research, industrial consultancy or collaborative research projects. The Industrial Consultancy & Sponsored Research (IC & SR) wing of the Institute coordinates the sponsored research and consultancy activities, while the Office of the Dean, Academic Research, administers the academic research activities.

The Engineering and Science Departments of our Institute are equipped with excellent laboratories, with state-of-the-art equipment. Research is being carried out on many areas of topical interest. For example, research is carried out in areas such as Laser Diagnostic Applications, Non-destructive Techniques, NMR Spectroscopy, Solid State Physics and Micro-electronic devices. Nano-materials technology, Bio-technology, Bio-medical research, Bio-chemistry, Wireless Local Loop Technology, Alternative Energy Sources and Emission Control, Composite Materials, Finite Element Modeling, Photo Elasticity, Structural Analysis, Computational Fluid Dynamics, Ocean Engineering, Vibration & Acoustics, Rarefied Gas Dynamics, to name a few. A more detailed description of the research work undertaken in each department is available in the Institute website. Strong expertise exists among the faculty on both theoretical and experimental methods of research.

M.Tech. students are required to complete a one year research project, in their

third and fourth semesters, under research guide(s), selected in consultation with the respective Head of the Department and Faculty Advisor.

IMPORTANT DATES

GATE QUALIFIED CANDIDATES & IIT GRADUATES

Opening of Website for ONLINE applications	06.03.2019 (Wednesday) 11:00
Closing of Website for ONLINE applications	10.04.2019 (Wednesday) 23:59
Suitability Test/ Interview for relevant candidates (Refer Table 3)	27.04.2019 (Saturday)
Date of reporting for admission	22.07.2019 (Monday)
Date for Additional Round(s) after the Admission Day (only if there are any unfilled seats)	23.07.2019 (Tuesday) / 24.07.2019 (Wednesday)
Photo session and Workflow enrolment	25.07.2019 (Thursday)
Orientation Programme,	26.07.2019 (Friday)
Commencement of Classes	29.07.2019 (Monday)

FOR SPONSORED & OTHER CATEGORY CANDIDATES

M.Tech. sponsored application portal opens	06.03.2019 (Wednesday)
Portal closes on the given last date at 23.59 hrs.	10.04.2019 (Wednesday)
Written Test and/or Interview for sponsored candidates	04.06.2019 (Tuesday) 05.06.2019 (Wednesday)
Date of reporting for admission	22.07.2019 (Monday)
Photo session and Workflow enrolment	25.07.2019 (Thursday)
Orientation Programme, Photo session and Workflow enrolment	26.07.2019 (Friday)
Commencement of Classes	29.07.2019 (Monday)

ADDRESS FOR CORRESPONDENCE

GATE QUALIFIED CANDIDATES & IIT GRADUATES
The Chairman
M.Tech. Admission Committee
GATE Office, IIT Madras,
Chennai 600036
Telephone : (044) 2257 8200/8205
Fax : (044) 2257 8204
Email : mtechadm@iitm.ac.in
Website : http://mtechadm.iitm.ac.in

SPONSORED & UOP CANDIDATES
The Joint Registrar (Academic Courses)
Indian Institute of Technology Madras
Chennai 600036
Telephone : (044) 2257 8046
Fax : (044) 2257 8042
Email : courses@iitm.ac.in
Website : http://www.iitm.ac.in


National Institutional Ranking Framework
India Rankings 2018
nirf
Rank 1
Category : ENGINEERING
Presented by Hon'ble Minister of Human Resource Development Shri Prakash Javadekar
Vigyan Bhawan, New Delhi.
3rd April, 2018